TECHNOLOGY DEPT.

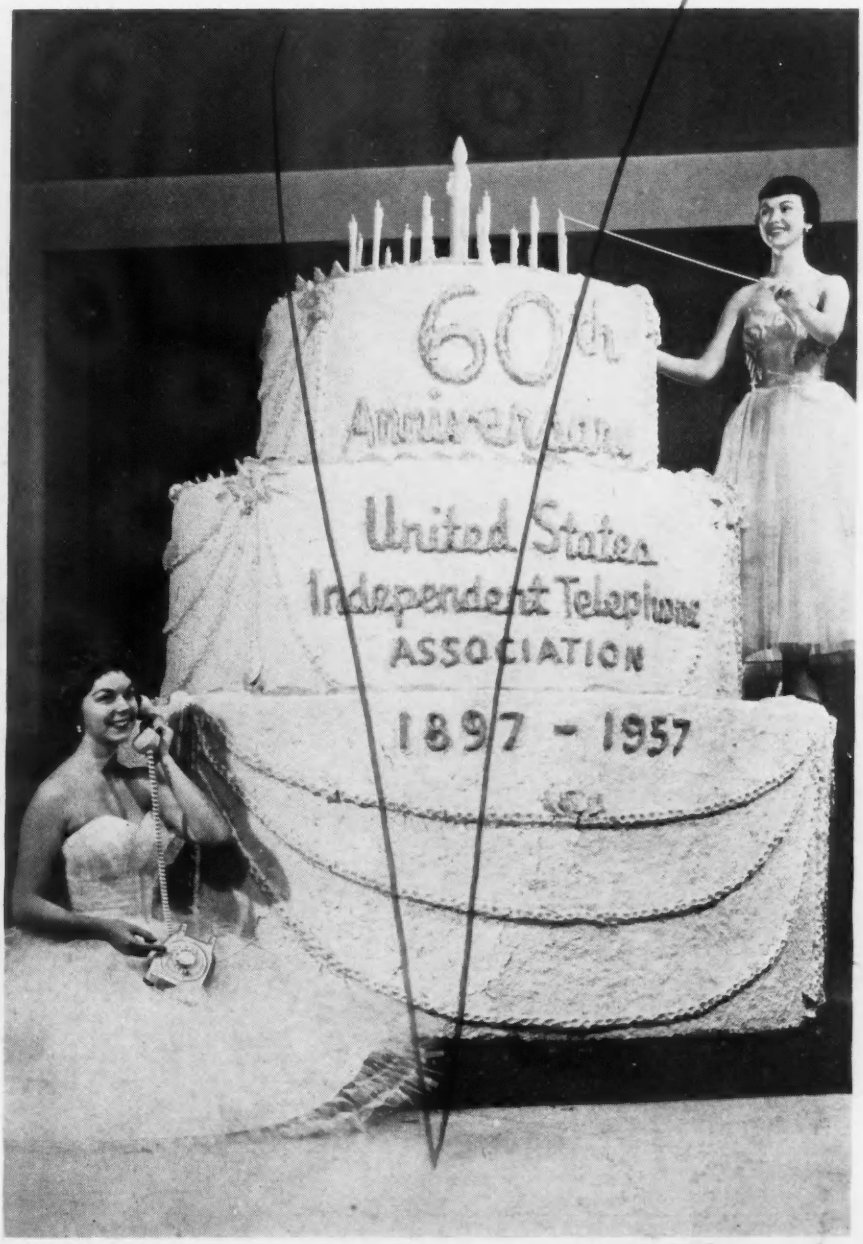
October 15, 1957

61-20

Telephone Engineer

AND MANAGEMENT

THE NATIONAL TELEPHONE MAGAZINE



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★ **USITA CONVENTION REPORT**
By John G. Reynolds

★ **A MORE VIBRANT INDUSTRY**
By Donald C. Power

★ **COMMON GOALS**
By F. R. Kappel

★ **FAIR RETURN**
By John F. Childs

★ **WASHINGTON REPORT**
By Clyde S. Bailey

★ **PLANT CONFERENCE REPORT**
By John S. Reed

★ **USITA ENGINEERING CONFERENCE**
By Richard A. Reynolds

★ **THE TE&M EDITORIAL**
"Emphasis On The Future"

take our CUSTOMERS WORD for it-

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You, too, can enjoy the many advantages and added profit derived from having L. M. Berry and Company handle your Directory Advertising.

Call or write today.

INTER-MOUNTAIN TELEPHONE COMPANY

TELEPHONE BUILDING
BRISTOL, TENNESSEE

KELLEY McNISH
PRESIDENT

July 11, 1957

Mr. Loren M. Berry
L. M. Berry and Company
Dayton, Ohio

Dear Loren:

In looking over some old records and correspondence recently, I was reminded of the fact that for a period of thirty years your organization has sold the Directory Advertising for the companies which I have operated. I was prompted to write you because it has given me a great deal of pleasure and satisfaction to review the long record of fine service rendered by your organization to my companies during these years.

Your Company has always been able to produce excellent revenue results and at the same time maintain good public relations with our subscribers because your salesmen have been properly trained. I want to tell you that I appreciate and value most highly our long and mutually profitable business relationship.

When I came to the Inter-Mountain Telephone Company as President in 1940, your Company was selling the advertising for all of our directories, and the results were very good considering the smaller circulation and rates at that time. It is unnecessary for me to review in this letter the advertising revenue figures, gross and net, showing the tremendous growth from that time up to the present, as you are familiar with the record. It suffices to say that for many years the increases in Directory Advertising revenue have aided us tremendously in financing our expansion program.

With your Company handling our Directory Advertising we have not only benefited from this increased revenue, but in being relieved of the entire responsibility of Directory Advertising sales, our managers and other personnel have been able to devote more time to expanding and improving telephone service and other facilities.

I feel that a job so well done over a long period of years deserves commendation, which is why I wanted to write you at this time to express my heartfelt appreciation for the remarkable results you have accomplished. I sincerely hope that our pleasant business relations will continue for many years to come.

Sincerely yours,

Kelley McNish

President

L. M. BERRY

AND COMPANY

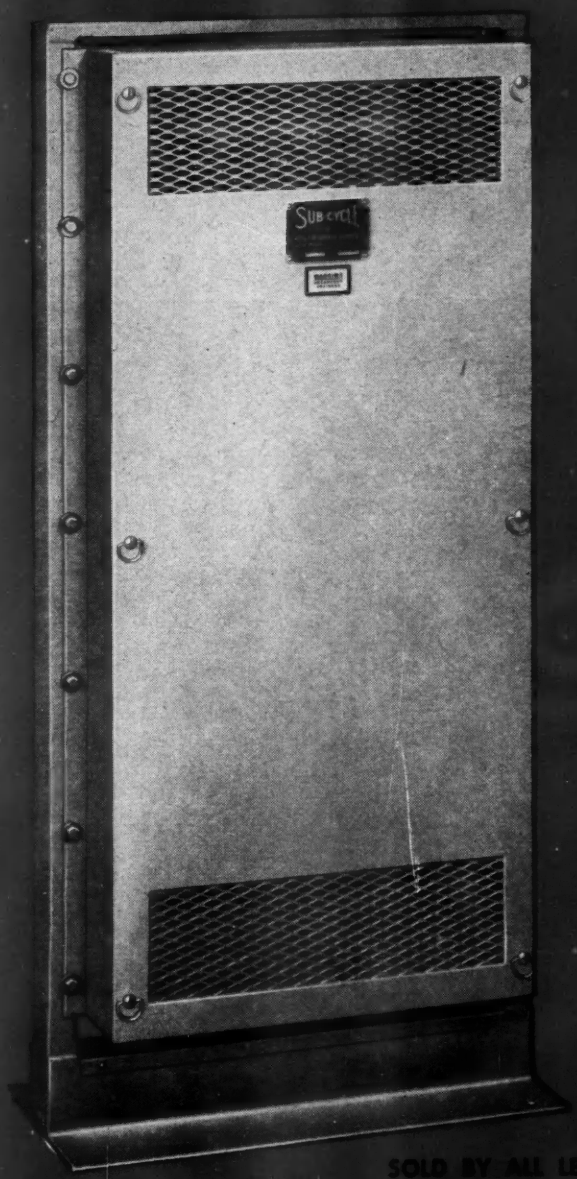
Hulman Building • Dayton 2, Ohio • Michigan 7421

TELEPHONE DIRECTORY ADVERTISING EXCLUSIVELY

another **FIRST** by Lorain!

THE S-5 SUB-CYCLE

FOR SYNCHROMONIC RINGING!



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Dependable

OPERATION!

YEAR AFTER YEAR

Making use of a unique conversion principle combined with basic Sub-Cycle circuits used repeatedly in other Lorain equipment, the S-5 Sub-Cycle has power to spare. Depend upon it to deliver full-rated capacity even under the most gruelling conditions. It has excellent voltage regulation, and will always deliver the exact synchromonic ringing frequencies. The S-5 has no moving parts; therefore, it provides the permanent, maintenance-free, economical operation that is characteristic of all Sub-Cycles.

The Model S-5 can be equipped to supply either 15 cycles or 20 cycles as the fifth frequency; if only four frequencies are required, the converter is designated as a Model S-4. A minimum of floor space, only 24-3/8" by 15", is required.

WRITE FOR BULLETIN 169

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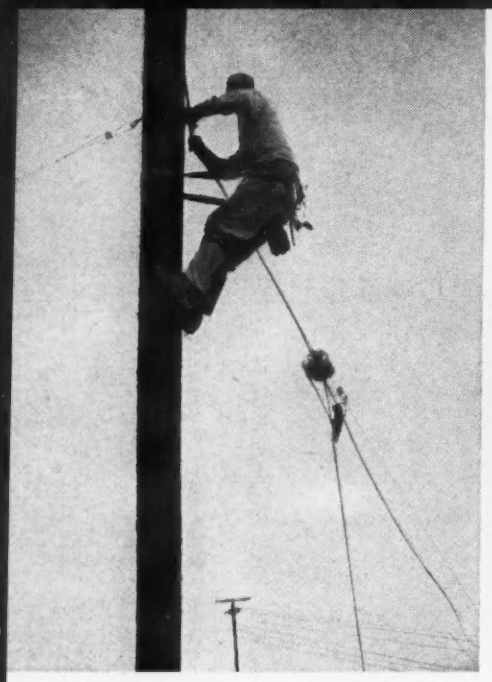
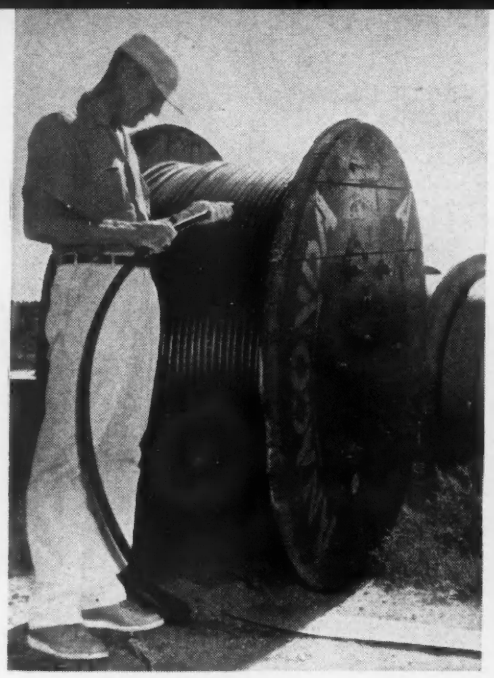
FLOTROL
PARTNERS IN DEPENDABILITY
SUB-CYCLE



Aerial & Duct Cable. Tough polyethylene jacket defies abrasion, moisture, sunlight, weather. Cable is lightweight . . . easy to install and splice. Either regular or factory-assembled aerial cable available.

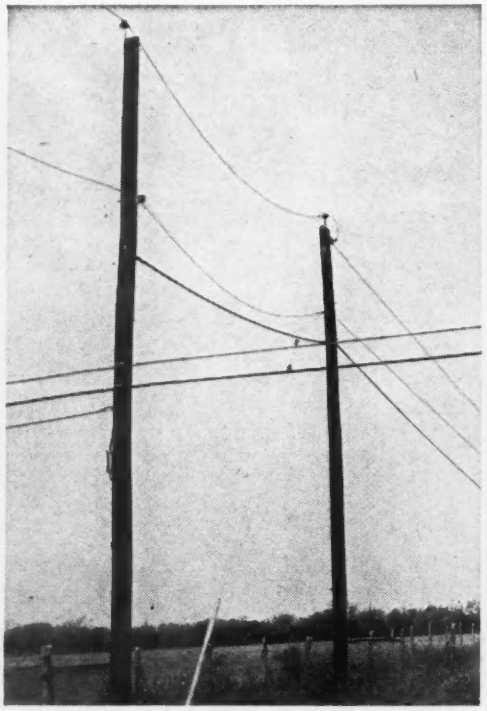


Self-supporting Cable. Same as Aerial & Duct Cable, except conductors are hard drawn, which lets cable be self-supporting without damage to jacket. Cable eliminates messenger and hardware expense.

Direct-burial Cable. Double polyethylene jacket makes this cable ideal for direct burial. It's tough, resists moisture, soil chemicals, fungi. Aluminum shield and armor add rodent, lightning protection.

See the Man from Anaconda—for telephone cable

Rural and Urban Distribution Wire. Plastic jacket gives full protection during installation, service. No over-all jacket—pairs are color coded, readily accessible for taps, easy to splice.



Paper-lead Cable. Anaconda now supplies a full line of paper-lead telephone cable made to the same rigid standards of quality and performance that distinguish its plastic telephone cables.

Splicing Kits. Complete kits containing all required splicing materials plus full instructions for splicing and grounding Anaconda Telephone Cables are available. Order with your cable.

Everywhere—Anaconda offers "on call" service in telephone cable. Seven mills, strategically located across the country, back a national network of distributors to assure you prompt, accurate service on highest quality telephone cable. On your next job—ask your distributor for Anaconda cable. Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

57333

ANACONDA®

ABOUT THIS ISSUE

WE WERE told, and we knew through our close contacts with USITA's Washington Office, committee chairmen and convention speakers, that USITA's 60th Anniversary Convention would surpass all others, both in point of attendance and scope of activities. And now as we write these few paragraphs and clear the last forms of the *Convention Report Issue* for the presses, we well know the early forecasts were correct.

THE RECENT USITA Convention at Chicago's Conrad Hilton Hotel was an excellent grand finale of this year's observance of the 60th Birthday of the Independent telephone industry.

We believe the 1957 Convention was the outstanding meeting of USITA's proud and colorful history. Intellectually, socially, inspirationally it was the "top."

THIS ISSUE of "TELEPHONE ENGINEER & MANAGEMENT" brings you the USITA Convention in print and we have attempted to crowd just as much of the Convention in its 148 pages as space would permit.

WE URGE you to carefully read and study the addresses presented by USITA President *Donald C. Power;* AT&T President *Frederick R. Kappel; John F. Childs,* vice president, Irving Trust Co., New York City; USITA Executive Vice President, *Clyde S. Bailey;* and the report on the *J. Walter Thompson Company's* presentation of "Interurbia — The Changing Face of America." These important discussions point up where the industry has been, where it is, and where it is going.

OF EQUAL importance are the stories summarizing departmental conferences held during the USITA Convention. With five important conferences — Engineering, Plant, Traffic, Commercial and Accounting — to report we ran out of space. However, the conferences not reported in this issue of "Telephone Engineer & Management" will be reported in the next issue which should reach you shortly after November 1.

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Telephone Engineer

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FRONT COVER

A cake commemorating the 60th Anniversary of the United States Independent Telephone Association (USITA) caught our attention at recent convention of the Michigan Independent Telephone Association and we commissioned JUDSON (JUDD) M. PERKINS, Director of Information, General Telephone Co., of Michigan, Muskegon, to supervise shooting of the special photograph for TE&M's front cover. MERLIN A. HUNTER, Muskegon, took the photograph. Model consultant was MRS. JOHN VAN HAVER, Muskegon; Artistic consultant was CARL MOLINE, Creative Ad Art, Muskegon. Models are (seated) MISS MARLENE NYGARD, general commercial department, General Telephone Co., of Michigan, Muskegon; (standing) MRS. JAMES STAMPER, records office supervisor, General Telephone Co., of Michigan, Muskegon. Miss Nygard's gown by HARDY-HERPOLSHEIMERS, Muskegon. The cake was created by BILL FOX DISPLAYS, Owosso.

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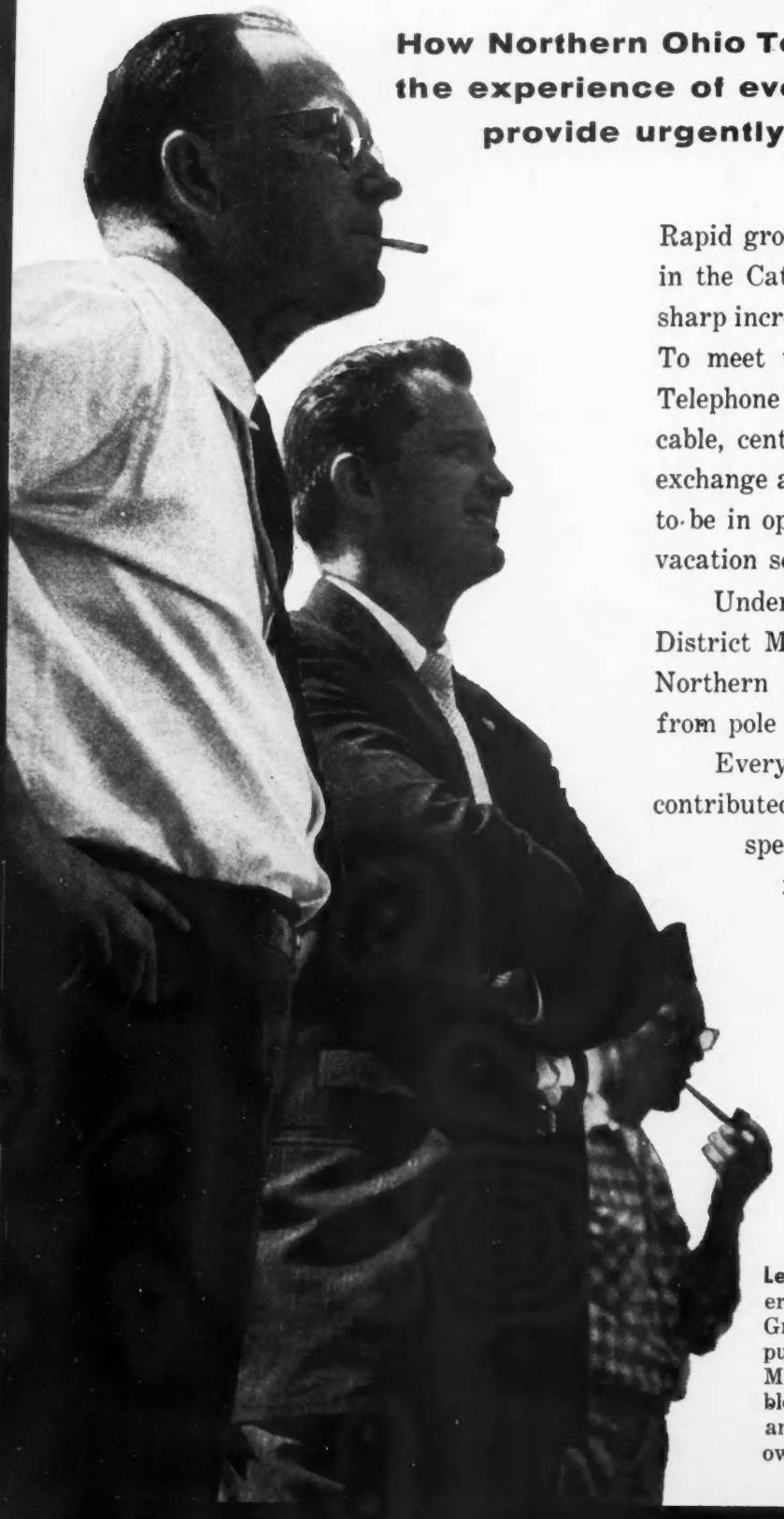
They met the "in-service" deadline at Catawba Island

How Northern Ohio Telephone Company used the experience of every man on their team to provide urgently needed service on time



Rapid growth of the popular vacation country in the Catawba Island area of Ohio caused a sharp increase in the need for telephone service. To meet these new demands Northern Ohio Telephone rushed construction of pole lines, cable, central office equipment for a new sub-exchange at Catawba Island. The facilities had to be in operation before the start of the next vacation season.

Under the skilled direction of Jim Peltier, District Manager of the Port Clinton area of Northern Ohio each task was programmed, from pole setting to cable splicing.

Every man connected with this project contributed generously from his own skills and specialized experience. Result: the new facilities went into service on time.

Left, Jim Peltier, District Manager of Northern Ohio Telephone and George Ostrander, Graybar Telephone Specialist, watch the pulling in of new cable at Catawba Island. Mr. Peltier has designed and patented a block for pulling in rural distribution cable and enjoys the satisfaction of having his own invention speed up the work.

Above, Clayton Stager, lineman with Northern Ohio Telephone Company, guides a new 12-quad 19 gauge cable, plus 303 pair 19 gauge, supplied by Graybar, as it is pulled in.

Useful life in a telephone pole depends upon wise selection of wood and its treatment to resist weather and insects. Here William Nelson, (left), sales representative of International Creosoting & Construction Co., Warren Ritter, (right), Northern Ohio Purchasing Agent, and George Ostrander, (center), check up on one of the treated pine poles delivered by Graybar for this carefully programmed construction job.

And, speaking of key materials, William C. Henry, President of the Northern Ohio Telephone Co., has this to say about Graybar:

"In meeting rigid schedules on important construction projects as well as routine needs, we expect and require from our suppliers the best and newest in equipment and materials, plus on-time deliveries. Graybar people work as closely with us as the members of our own staff. We can always count on their cordial teamwork."

We at Graybar are proud to be on the construction and maintenance teams of Northern Ohio, and other great independent telephone companies across the nation. Graybar is wholly owned by its operating and retired personnel and, like you, we're proud of our own independent status. You'll get that extra bit of attention from friendly people, anxious to please. For anything electrical, from the top of the pole to the bottom of the hole, call Graybar *first.*

742-238

Call Graybar first for...

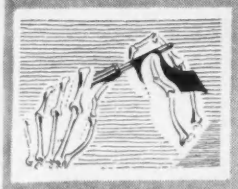
GraybaR QUALITY *Everything Electrical*

INDEPENDENT TELEPHONE ASSOCIATION

GRAYBAR ELECTRIC COMPANY, INC.
420 Lexington Avenue
New York 17, N.Y.

IN OVER 130 PRINCIPAL CITIES

BE MODERN



Don't rub your fingers to the bone

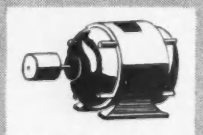
POLISH A PLUG IN 30 SECONDS

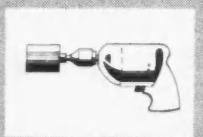
Push-Pull . . . it's that simple, it's that quick with a "Long" plug polisher

Only $9.05 f.o.b. Topeka

The "Long" plug polisher does an excellent job of polishing in just seconds.

Fits electric motor with ½" shaft or can be used with either ¼" or ½" electric drill.





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SERVING THE GROWING INDEPENDENT TELEPHONE INDUSTRY

CABLE SPINNING EQUIPMENT CO.

3100 TOPEKA AVE.

TOPEKA, KANSAS

COMING CONVENTIONS

VIRGINIA Independent Telephone Association, Roanoke Hotel, Roanoke, Oct. 24-25.

SOUTH CAROLINA Independent Telephone Association, Clemson House, Clemson, Nov. 4-5.

ALABAMA-MISSISSIPPI Telephone Association, Thomas Jefferson Hotel, Birmingham, Nov. 11-12.

GEORGIA Telephone Association, General Oglethorpe Hotel near Savannah, Georgia, Nov. 13-14.

SOUTH DAKOTA Telephone Association, Cataract Hotel, Sioux Falls, S. D., Nov. 21, 22, 1957.

OKLAHOMA Telephone Association, Huckins Hotel, Oklahoma City, Nov. 21-22.

FLORDIA Telephone Association, The Balmoral, Bal Harbour, Miami Beach. Dec. 2-3.

LOUISIANA Telephone Association, Jung Hotel, New Orleans, Feb. 12-13, 1958.

MINNESOTA Telephone Association, St. Paul Hotel, St. Paul, Feb. 17-19, 1958.

TEXAS Telephone Association, Baker Hotel, Dallas, March 3-4, 1958.

KENTUCKY Telephone Association, Phoenix Hotel, Lexington, March 4, 1958.

IOWA Independent Telephone Association, Hotel Fort Des Moines, Des Moines, April 8-9, 1958.

OHIO Independent Telephone Association, Deshler Hilton Hotel, Columbus, April 14-16, 1958.

NEBRASKA Telephone Association, Paxton Hotel, Omaha, April 22-23, 1958.

INDIANA Telephone Association, Claypool Hotel, Indianapolis, May 7-8, 1958.

WISCONSIN State Telephone Association, Hotel and location to be announced. May 14-15, 1958.

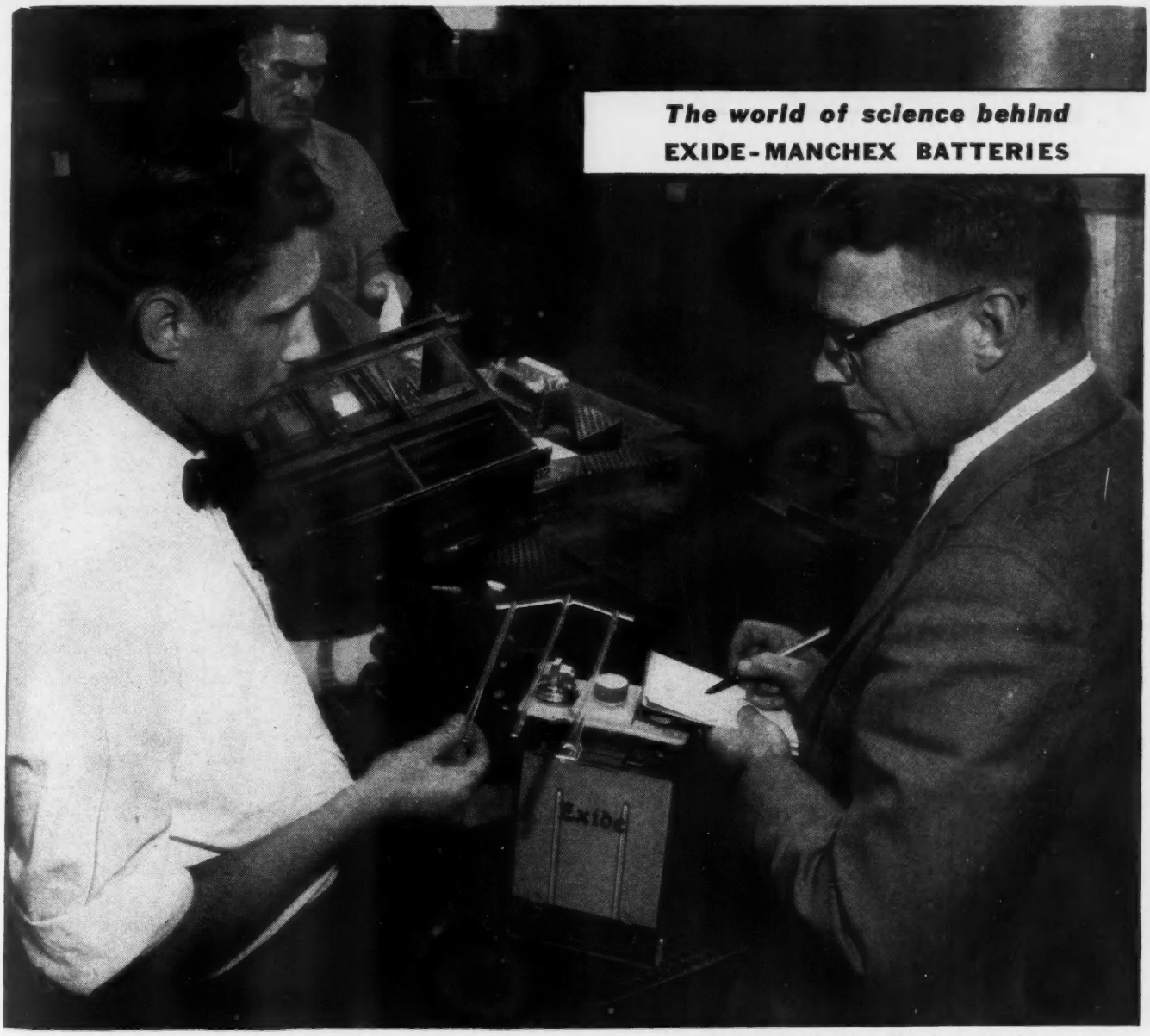
ILLINOIS Telephone Association, Hotel Pere Marquette, Peoria, May 21-22, 1958.

MISSOURI-KANSAS Telephone Association, Town House, Kansas City, Kans., May 26-27, 1958.

PENNSYLVANIA Independent Telephone Association, Bedford Springs Hotel, Bedford, May 26-28, 1958.

CALIFORNIA Independent Telephone Association, Sheraton-Palace Hotel, San Francisco, June 4, 5, 6, 1958.

NEW YORK Telephone Association, Scaroon Manor, Schroon Lake, June 16-18, 1958.

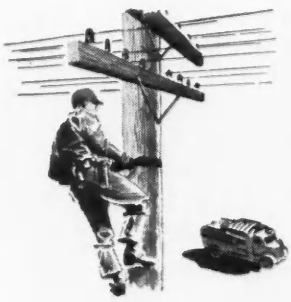


The world of science behind
EXIDE-MANCHEX BATTERIES

Being interviewed is E. L. Daniels, Jr., development engineer

"These wide open spacers boost battery power"

At the Exide Laboratories—**Reporter:** When is it most important for a battery to have maximum power, Mr. Daniels?



Daniels: Under short, heavy loads—such as when equipment is switched on or off.

Reporter: How do the wide open spacers help?

Daniels: By providing a shorter, more direct current path between the plates. Hence the internal resistance of the battery is reduced. This is reflected in improved voltage, increased current capacity, and less heating under load.

Reporter: Are there any other advantages to these spacers?

Daniels: Yes, electrolyte has easier access to plates for better constant load battery performance. And the open spacers allow used active material to fall more readily to the bottom of the jar.

Reporter: Obviously, this is an important feature of Exide-Manchex Batteries.

Daniels: Yes it is. But it's only one of the many engineering details that contribute to their long life and high performance.

Note to battery users: Whenever you order batteries for float or cycle service in stationary applications, be sure to specify Exide-Manchex. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

THE ELECTRIC STORAGE BATTERY COMPANY **Exide**®

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AT LOWER COST

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Here's the simple, cost-cutting way to install underground pipe. Speed your jobs with a GREENLEE Pusher. One-man-operated, portable, simple to operate. No tearing up of pavement . . . eliminates extensive ditching, tunneling, backfilling, tamping, repaving. Cuts job time to a fraction. GREENLEE Hydraulic Pipe Pusher often pays for itself on first job. Two sizes — model shown above for pushing 3/4" to 4" pipe. Larger unit, below, for pipe over 4", concrete sewer pipe and large drainage ducts. Power pump (as shown above) also available for extra ease and speed of operation.

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ACROSS THE EDITOR'S DESK

USITA Convention

AS THIS IS written the USITA National Convention is about to convene in Chicago to celebrate its 60th Anniversary — USITA's Diamond Jubilee. It is necessary to write this column before the convention starts as this part of the magazine will have been printed while sessions are on.

This Report Number has been long in the making. A number of the speeches and reports are condensed and edited before they are made and then printed in advance. A large section in the center of this issue is then held for the running convention story and pictures — which incidentally necessitates plenty midnight oil for our Editorial Staff from convention-end until the magazine is mailed about October 21. That is why you are getting this report while it is still news!

"Good Work"

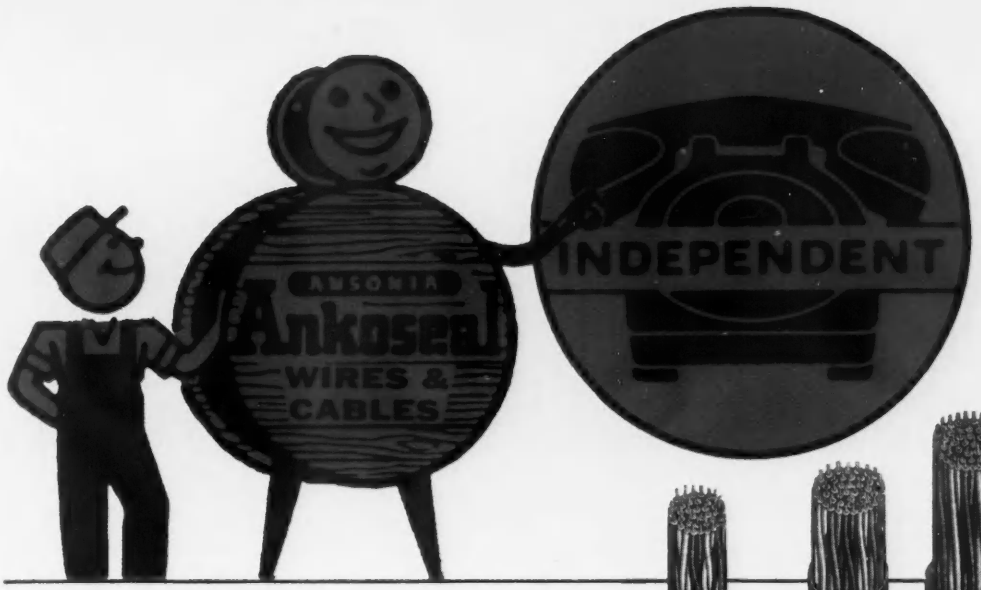
THANKS TO *Matt L. McWhorter*, chairman of the Georgia Public Service Commission and chairman NARUC Telephone Commissioners' Committee; *Donald C. Power*, president of USITA and also the General Telephone Corporation; *John P. Boylan*, chairman of the board, Rochester (N. Y.) Telephone Corp.; *Ruth E. Richards*, General Tel. of Illinois; *Clyde S. Bailey*, executive vice president of USITA; *John S. Reed*, Lincoln Tel. & Tel. Co., and our Technical Editor; and last but by no means least we thank our Managing Editor *John G. Reynolds* and his staff in presenting to you, our readers, an outstanding pre-convention issue of October 1 celebrating USITA'S 60th Anniversary. It was the largest, and we think the best, issue we have ever published in our 48 years of service. The above authors and Staff members make quite a team, we think!

A Busy Week

DID YOU know that September 8 thru 14 was *Television Week*, *National Fall Millinery Week*, and, also, *Lessons in Truth Week* as well as *Independent Telephone Week*. Could it be that our wives snuck in on us with the *Lessons in Truth Week?* We know *Independent Telephone Week* was a big success as fe have been swamped by the clipping agencies and many of our thoughtful readers have sent us their clippings. Oh yes, the following week was *National Civil Defense Week* to protect us, no doubt, from *Husbands' Night-out Week!*

Our Front Cover

OUR FRONT COVER in this issue necessitated quite a do. The beautiful 60th Birthday Cake that graced the Conrad Hilton Hotel during convention time was birthed in Michigan and received its apprenticeship at the recent Michigan Convention. *Judd Perkins*, Director of Public Relations of General Tel. of Mich., was the baker, chef and stove handler for the cake and also handled the commission for us for the cover picture. What with 15 camera shots, models and their dresses, model releases, artistic consultant and Judd's time and efforts we feel like LIFE launching a sell-out issue. See page 3 for further details.



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Not Down To Price

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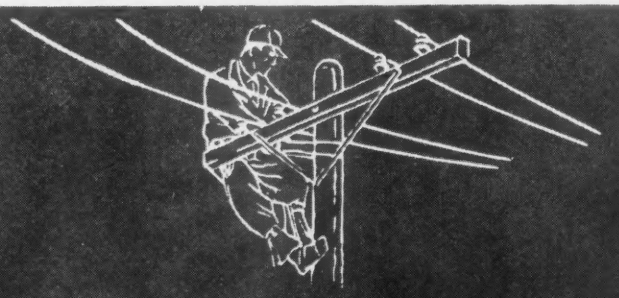
ANSONIA®
Ankoseal

The Oldest Name In Plastic Telephone Cables In The Most Modern Plant Devoted Entirely To Producing Plastic Cables.

INDUSTRY NEWSLETTER



Iowa Court Upholds "Fair Value"

IOWA Supreme Court last month upheld right of Iowa cities to set public utility rates, but stated courts can over-rule "unjust" rates. Court made statement in decision handed down in bitterly contested rate case between Iowa-Illinois Gas & Electric Co. & city of Fort Dodge.

Court spokesman said decision should serve as a basis for rate setting throughout Iowa. It was first utility regulation decision handed down by Iowa Supreme Court since 1909.

Decision said city councils must use "fair present value" of utilities in determining what would be fair return through rates on company's investment. Court did not question cities' right under Iowa law to set rates, but did set up procedure they must use in determining them. The "fair present value" of utility would be ratio between original cost & replacement cost, with greater emphasis on present day replacement costs, opinion said . . .

District Court Judge Uhlenhopp said old rate was "confiscatory" & city's rates should give 6% return. High court in unanimous opinion written by Justice Robert L. Larson, upheld Uhlenhopp's injunction but said greater weight should be placed on present day construction costs to determine "fair present value."

REA Demonstrates New Equipment

WORKING demonstration of its new unattended, automatic dial mobile & rural subscriber radiotelephone system was given by Central Virginia Tel. Corp., Amherst, Va., Sept. 10-11. Representatives of Rural Electrification Administration, FCC, Bell System & Independent telephone interests, Motorola, which furnished system, & trade press attended demonstration.

Central Virginia company, an REA borrower, received FCC authorization for use of new facilities, in mid-May, & placed system in operation last summer. In making grant, FCC waived common carrier radio rule sections to permit base station to operate on unattended basis & without necessity of maintaining operating log, & to permit mobile units & rural subscriber station to operate without the transmission of identifying call signs.

152-megacycle band system is outgrowth of REA development program which involves participation by Motorola & Automatic Electric Co., with Automatic Electric furnishing similar equipment to REA specifications for North Florida Tel. Co., Live Oak, Fla., another REA borrower. Program looks toward facilities to provide dial radiotelephone service to potential mobile subscribers & isolated fixed rural subscribers whom REA telephone borrowers cannot serve by wire lines or other conventional means, with automatic radio dial facilities tying directly into landline telephone system.

Equipment embodies advanced system of selective calling, where landline telephone stations as well as other radio installations are reached through new push-button arrangement at the transmitting radio station, rather than through conventional telephone dialing system.

Central Virginia & North Florida equipment contracts were for two mobile units, one base station & one fixed subscriber station, but negotiations are now going on in case of Central Virginia company to expand system, following successful operation of experimental units. Contract for similar facilities has been placed with Motorola by Cameron (La.) Tel. Co., an REA borrower devastated by Gulf Coast hurricane recently. Initial Cameron plans to inovlve several base stations, four mobile radiotelephone units, & three rural subscriber stations.

W. E. Ranked 9th Largest

REPORTING on survey of 500 largest industrial corporations in nation, *Fortune Magazine* found Western Electric Co. the ninth largest manufacturing company in total sales during 1956, with $2,372,726,000. Company ranked eighth in number of employes, while it placed 25th among 500 corporations on basis of total

NEW! EXTRA LONG RECEIVER Koiled Kords*

NOW IN COLOR

Extra long receiver KOILED KORDS in color enable you to offer another service to those subscribers who want to move more than four and a half feet from their instruments.

New, long KOILED KORDS retractile cords in color — and in black — are offered in two standard lengths, 18 inches retracted that extend to approximately 9 feet and 30 inches retracted that extend to 15 feet.

Extra long receiver KOILED KORDS are available in colors to match all telephones. See your telephone supply house for full information.

Koiled Kords INCORPORATED

BOX K, NEW HAVEN 14, CONNECTICUT

KOILED KORDS, the original retractile cords, are the result of 17 years of research, development and use.

* KOILED KORDS is a trade mark of KOILED KORDS, INC.

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I WANT WHEN

T WHAT I WANT

N I WANT IT

You get exactly *what* you want when you order from Kellogg and it is delivered when specified. No broader line of telephone supplies is available anywhere. Kellogg warehouses are stocked with only one purpose in mind: To serve the needs of the independent telephone company. Kellogg has the largest inventory of the supplies *you* need. Men who are thoroughly trained in telephone practices assist you with your orders . . . help to make certain you get exactly *what* you want, *when* you want it.

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A DIVISION OF I T & T

KELLOGG SWITCHBOARD & SUPPLY COMPANY
A Division of International Telephone and Telegraph Corporation
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Phone: POrtsmouth 7-6900

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Humboldt 7085

410 N. Syndicate Avenue
St. Paul 4, Minnesota
Midway 6-7908

1515 Turtle Creek Blvd.
Dallas 7, Texas
Riverside 7-5191

504 County Bank and Trust Bldg.
Passaic, New Jersey
PRescott 9-3610

23 Broderick Road
Burlingame, California
OXford 7-5780

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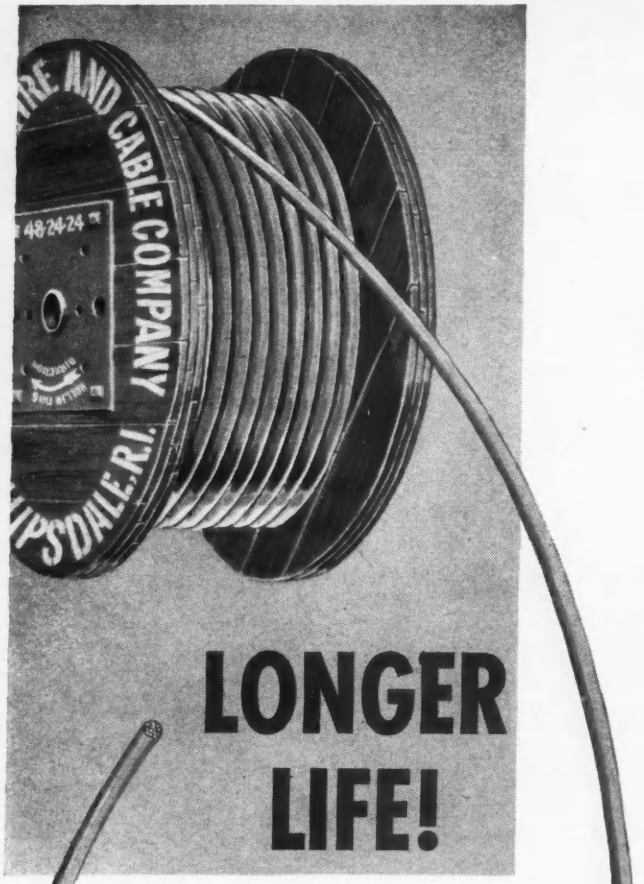
1594 Southland Circle, N.W.
Atlanta, Georgia
Sycamore 4-2441

Export Distributor:
International Standard
Electric Corp.
50 Church Street
New York 7, New York



When you talk about Kennecott lead-alloy sheathed cable, longer life REALLY MEANS SOMETHING! It means retention of full electrical properties over the *entire* long, long life of the cable. That's because every component that goes into Kennecott Telephone Cable—from copper conductor to superior, uniformly strong "Young Process" lead sheath—is checked and tested. Flaws, imperfections and inferior materials are ruthlessly eliminated. Get complete information on Kennecott Telephone Cable from the Chase sales office near you .

IT'S KENNECOTT TELEPHONE CABLE

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Chicago	Detroit	Los Angeles	(Maspeth, L. I.)	Rochester	

Newsletter

(Continued from page 10)

profits in dollars. From standpoint of rate of profit when measured in terms of amount of profit per dollar sales, Western Electric was 372nd among 500 companies listed. When company's profit was compared from point of view of return on invested capital, company stood 257th on list of companies.

Rate Adjustments

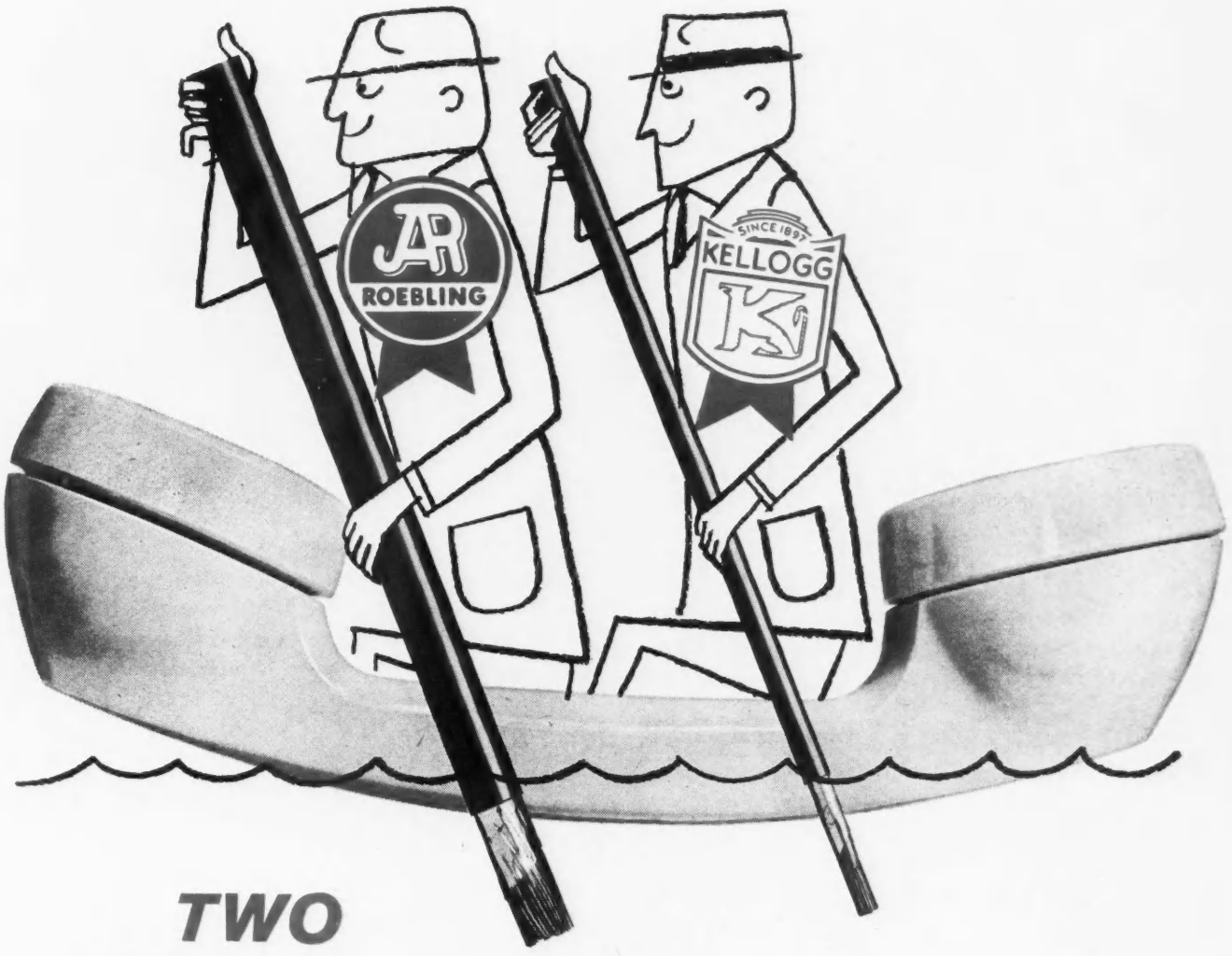
MINNESOTA Railroad & Warehouse Commission has approved following applications for rate adjustments: (1) Foreston Tel. Co., for authority to change its schedule of telephone rates & charges at Foreston, Minn. New rates will earn 3.64% on $36,722 rate base. (2) Mille Lacs Tel. Co. for authority to change its schedule of telephone rates and charges at Onamia, Wahkon, Isle, Malmo, & Garrison, Minn. (3) Floodwood Tel. Co. for authority to change its schedule of telephone rates and charges at Floodwood, Minn. . . . (4) Albany Mutual Tel. Association for authority to change its schedule of telephone rates & charges at Albany, Freeport, & New Munich, Minn. . . . (5) Deer Creek Tel. Co. for authority to change its schedule of telephone rates & charges at Deer Creek, Minn.

REA Loans

FOLLOWING loans to improve & extend telephone service in rural areas were approved last month by Rural Electrification Administration: Arab Tel. Co., Arab, Ala.; $62,000, fourth loan; L. M. McDonald is pres. & mgr. of Arab Tel. Co. . . . Foothills Rural Tel. Cooperative Corp., Staffordsville, Ky.; $515,000, third loan. J. Milton Kitchen is pres. of Foothills Rural Tel. Cooperative. Duell Williams is mgr. . . . Mid-Kansas Tel., Inc., (formerly Sterling Tel. Co.) Sterling, Kans.; $702,000, second loan. Howard K. Culbertson is pres. & mgr. of Mid-Kansas Telephone, Inc. . . . A & M Tel. Co., Springfield, Mo.; $858,000, first loan; W. R. Trowbridge is pres. & mgr. of A & M Tel. Co. . . . Stover Tel. Co., Stover, Mo.; $49,000, second loan. Lyle H. Rath is pres., & mgr. of Stover Tel. Co. . . . Pioneer Tel. Cooperative, Kingfisher, Okla.; $121,000 fifth loan. T. W. Beiland is pres. of the Pioneer cooperative, & Roy Boecher is mgr.

People In The News

JENNINGS B. TEAL named defense communications coordinator for Carolina Tel. & Tel. Co., Tarboro. N. C. . . . Alfred Higgins has retired as gen. mgr. of Alberta Government Telephones, Edmonton, Alberta. He served company for 47 years. . . . Harold R. Huntley named chief engineer American Tel. & Tel. Co. He succeeds Gordon N. Thayer. . . . Walter S. Sparling named pres. Ohio Bell Tel. Co. He succeeds John A. Green who became board chairman.



TWO FOR THE MONEY

1. Unsurpassed Roebling Telephone Cable

2. Unsurpassed Kellogg Service

You're always assured of both, when Roebling Plastic or Lead-encased Telephone Cable is purchased through the famous Kellogg Switchboard and Supply Company.

You get Roebling reliability and extra value . . . plus the unique advantages of Kellogg's intensive experience in engineering and installing telephone systems.

FREE—New Plastic Telephone Cable Engineering Book. Gives important data you need at your fingertips. Write for your copy to Kellogg Switchboard and Supply Company, 79 West Monroe Street, Chicago 3, Ill., or Electrical Wire Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

Roebling Lead-encased Telephone Cable—Available in conductor sizes 19, 22, 24 AWG...5 to 909 pairs. Paper-taped conductors, with 1% antimony lead sheath. Other coverings for special requirements.

Roebling Plastic Telephone Cable—Conductor sizes 19, 22 and 24 AWG... from 6 to 404 pairs. Light weight permits smaller messenger, longer spans. Conductors are polyethylene-insulated, sheath is high-molecular-weight polyethylene.

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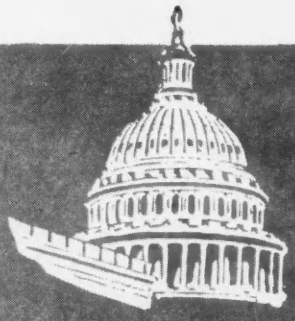
WASHINGTON NEWSLETTER



Federal Agencies

TWO FEDERAL agencies whose names ordinarily do not appear in these columns as often as some others — for example, the Federal Communications Commission and Congress — are showing more and more signs of becoming important forces in communications policy rulings in Washington in the next few years.

The two are the General Service Administration, charged with the job of being the federal government's "housekeeping agency," and the Department of Justice, particularly its Antitrust Division.

Both are displaying intensified interest in communication matters up for decision by the FCC, particularly the private line and lease-maintenance cases.

The private line and lease-maintenance cases, of course, have important implications for the entire telephone industry. With more and more organizations swinging into private line services and away from message toll business, at least for substantial amounts of their traffic, any investigations of private line rates and services is of obvious significance.

The lease-maintenance proceeding, in which the Bell System is attempting to make clear its right to provide, on an interstate basis, private mobile radiotelephone systems, is also of considerable importance. If the Bell companies ultimately are not permitted to render the service, under the consent decree reached with the Justice Department in January, 1956, the potential area of operations of the telephone industry is reduced by a considerable amount.

GSA is an intervenor in the lease-maintenance case, but thus far has saved most of its fire for the private line proceeding. Hearings in the latter case, incidentally, are slated to begin Nov. 19, but a request for postponement was indicated at a conference of the parties in Washington to discuss procedures for the case. As a result, the direct testimony of the common carriers on costs of providing the private line services may be distributed before the end of this year, but there seems relatively little chance that the hearings will get under way until 1958.

GSA's approach in general to private line services seems to be to take nothing for granted. One indication of this came with the offering by the Bell System of data on customer usage of its private line services. At an informal conference, it was agreed that the company would confer with the FCC staff about the method by which the data would be presented. GSA later demanded to be permitted to see the same information which the Commission staff was considering. The company objected, declaring that this would disclose customers' names, but adding that it would not object to GSA or any other party seeing the rest of the material. After oral argument, Examiner J. D. Bond denied the GSA motion.

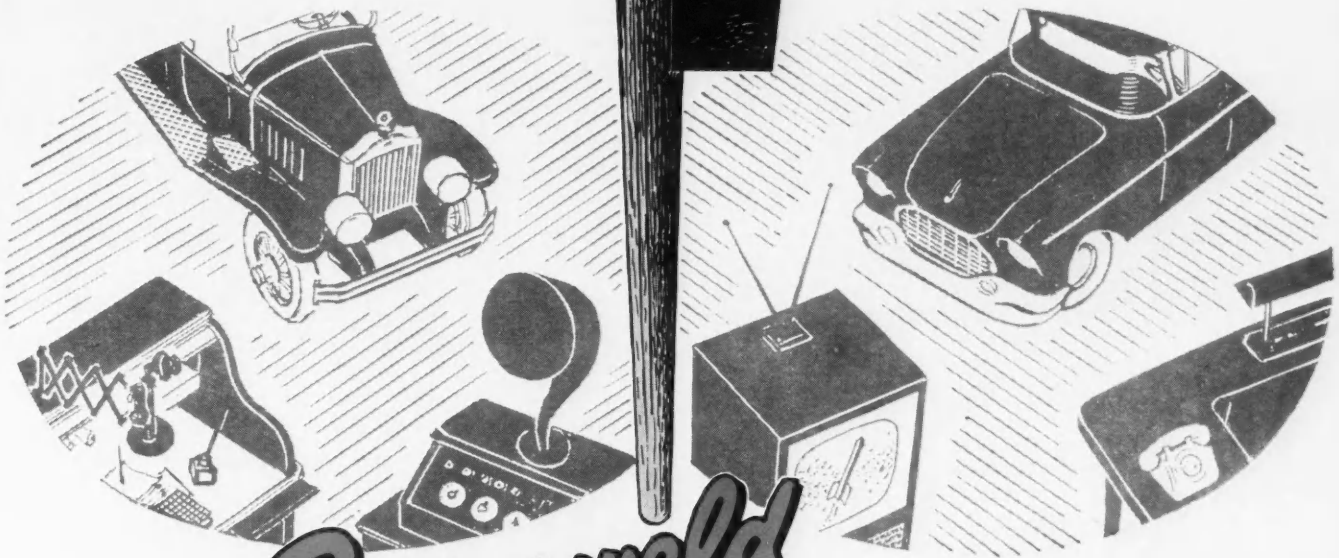
Latest GSA move in the case came with a request that the Commission suspend a tariff filed more than a month ago providing for the provision of channels for data transmission. Service offered by the American Telephone & Telegraph Co. Long Lines Department ranges from channels capable of transmitting 45 to well over 1000 "bits" a second — a "bit" representing the smallest particle of information to be stored, transmitted, or otherwise used.

GSA described the tariff as a reissue of existing tariffs, and said that the rates outlined represent a "substantial increase over present applicable rates for the telephone grade of service utilized in conjunction with operation SAGE. Accordingly, (the tariff) represents increases in rates over those now applying to the service involved which will amount to millions of dollars per year but in an amount which cannot at this time be definitely ascertained."

Long Lines responded that the GSA petition apparently is based on a misunderstanding, and that the new tariff covers "a new offering at new rates" and "is not a reissue of, nor does it supersede, any existing tariff."

Lots of changes down there since

these Copperweld Wires have been up here!



Copperweld TRADE MARK LINE WIRE

gives long-life performance

Years pass . . . products come and go . . . but the qualities of Copperweld* Line Wire make it as modern today as the day it was installed.

For more than 40 years Copperweld Line Wire has continued to provide excellent talking qualities because of its long-life, non-rusting copper covering. It has also provided the permanence and rugged strength to resist the most adverse weather conditions because of its protected steel core.

Copperweld's record is unmatched for past performance. But the story doesn't end there—it is designed to provide outstanding performance in the future. Copperweld Line Wire is the only long-span conductor suitable for voice, signal, and carrier circuits. Write us today for complete engineering data.

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PROVED IN SERVICE FOR OVER 40 YEARS

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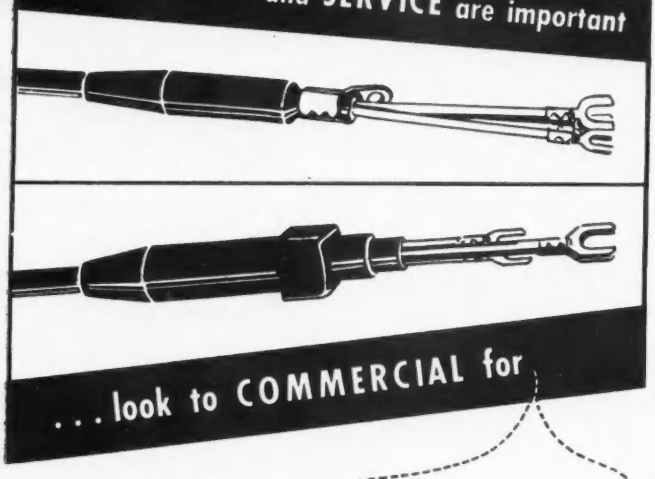

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Extra Length Cords
Retractable Handset Cords
Test Cords and
Special Cords for
Inter-Communication Systems
Switchboard Cord Cushions

. . . ALL MADE BETTER TO LAST LONGER . . . ALL READY FOR YOUR CALL! OUR COMPLETE REPAIR DEPARTMENT is AT YOUR SERVICE for quick action on re-butting switchboard cords and re-braiding old cotton switchboard cords with Nylon

- **Handset cords**
- **Deskset Cords**
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with tough, long-wearing NYLON, NEOPRENE or MERCERIZED COTTON JACKETS

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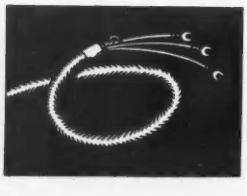


QUALITY CORDS FOR ALL MAKES AND TYPES OF TELEPHONE INSTRUMENTS

Washington

(Concluded from page 16)

It said that as applied to SAGE, it "will result in annual charges substantially lower than the estimated charges" previously furnished to the Air Force.

Continuing its contention that the new rate pattern has not been justified, GSA declared also in a reply to the AT&T statement that the entire tariff, "which predicates all rates on the use to which the channels are put, violates a fundamental principle of ratemaking. Tariffs should specify charges for the kind of service provided, rather than pricing services in relation to the use to which the facilities are to be put . . . It has long been recognized that the pricing of public utility services in relation to the use to which commodities are to be put engenders discriminations, preferences, and prejudice. . . ."

"Over-The-Horizon" System

THE NATION'S first over-the-horizon system for telephone & television transmission — significant forward stride in art of telecommunications — went into public service last month between United States & Cuba. New system, employing technique of forcing radio microwaves beyond curvature of earth, is equipped to carry 36 simultaneous conversations plus one television program in each direction. It supplements cables now supplying 50 circuits for telephone service between U. S. and Cuba. It also furnished for first time a means of interconnecting 18 stations in Cuba with some 400 network stations in U. S., Mexico & Canada.

Addition of telephone circuits will relieve traffic conditions on cable systems which have been operating at capacity for several months. Telephone traffic between points in U. S. & Cuba has tripled in last 10 years & is still growing at rapid rate.

AT&T Long Lines & Radio Corp., of Cuba, subsidiary of International Telephone & Telegraph Corp., built new radio link. It took about two years to engineer & construct, & cost $3,000,000. System can be expanded to handle 100 telephone circuits plus one TV program in each direction.

Terminals for new system are located at Florida City, Fla., & Guanabo, Cuba — 185 miles apart. Known technically as "tropospheric scatter propagation," it differs sharply from conventional microwave systems which use line-of-sight transmission.

The importance of 1/12th dozen

by John Voss

At a state meeting, not long ago, I ran into a man who's president, general manager, commercial manager, service manager and head bookkeeper of a 150-station exchange out in the prairie country.

We had a real pleasant chat, mostly because our talk cleared up a misunderstanding he'd had about Stromberg-Carlson.

"We read a lot," he said, "about your being part of General Dynamics Corporation, and moving into a huge new building and generally growing like a mushroom. We smaller companies are inclined to get the idea that we're only a nuisance when we send in an order for, say, one replacement housing for a 1250 telephone a subscriber of ours drops and breaks."

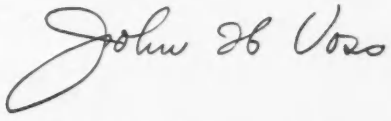
Straightening out my friend in this opinion gave me a chance to quote the policy that is practically a motto around here — no matter what we make, *Service* is the finest thing we have to sell.

Independent operating companies, big or small, are our best customers. And when there's trouble, or a shortage or an accident, a one-twelfth-of-a-dozen telephone housing is as important to the "little" company that needs it as a 1000-line addition is to a metropolitan XY exchange. If my friend dropped a note to his nearest branch, or the factory, he'd get his part as fast as the mailman or expressman could carry it.

Another thing: trouble or no trouble, routine or emergency, correspondence that comes into our factory or branches gets answered *right away*. Nothing makes me madder than writing somebody and then waiting and waiting for an answer. Even if a man's going to say "No" to you, by gosh I think he owes it to you to say it promptly.

Our representatives in the field are accustomed to the same sort of thing. Did you know that the man who calls in your territory sends in his call reports *daily?* Or that Tommy Thompson or Bill Rockwood or Colby Knapp or I *read* these reports daily? And believe me, if there's trouble or a complaint or a request for help in any of them, somebody gets on that matter right then and there — even when its from a "little" company!

Since the end of World War II, our business has grown over seven times. It's nice to be "veep" and general manager of a successful operation like that. But I believe that, no matter how we grow, or how happy we are with orders in five and six figures, we'll never be too big to welcome—and fill—an order for one-twelfth dozen of anything.



Vice President and General Manager
Telecommunication Division

STROMBERG-CARLSON, A Division of General Dynamics Corp., Rochester 3, N. Y.

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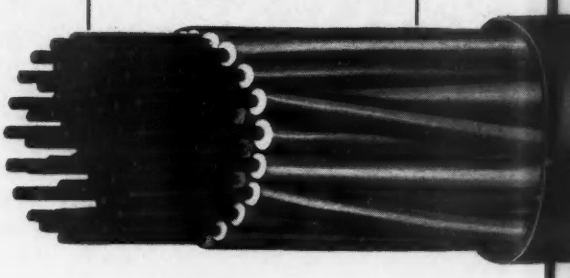
MEET A NEW MEMBER OF A FAMOU

PHELPS DODGE THERMOPLASTIC EXCHANGE AREA TELEPHONE CABLE

FOR AERIAL, DUCT AND DIRECT BURIAL USES



Exchange Area Telephone Cable, Aerial and Duct Type
(Supplied with protective aluminum armor and outer polyethylene jacket when intended for direct burial)

The controlled craftsmanship and quality of Exchange Area telephone cable are typical of the entire line of Phelps Dodge thermoplastic telephone wires and cables including:

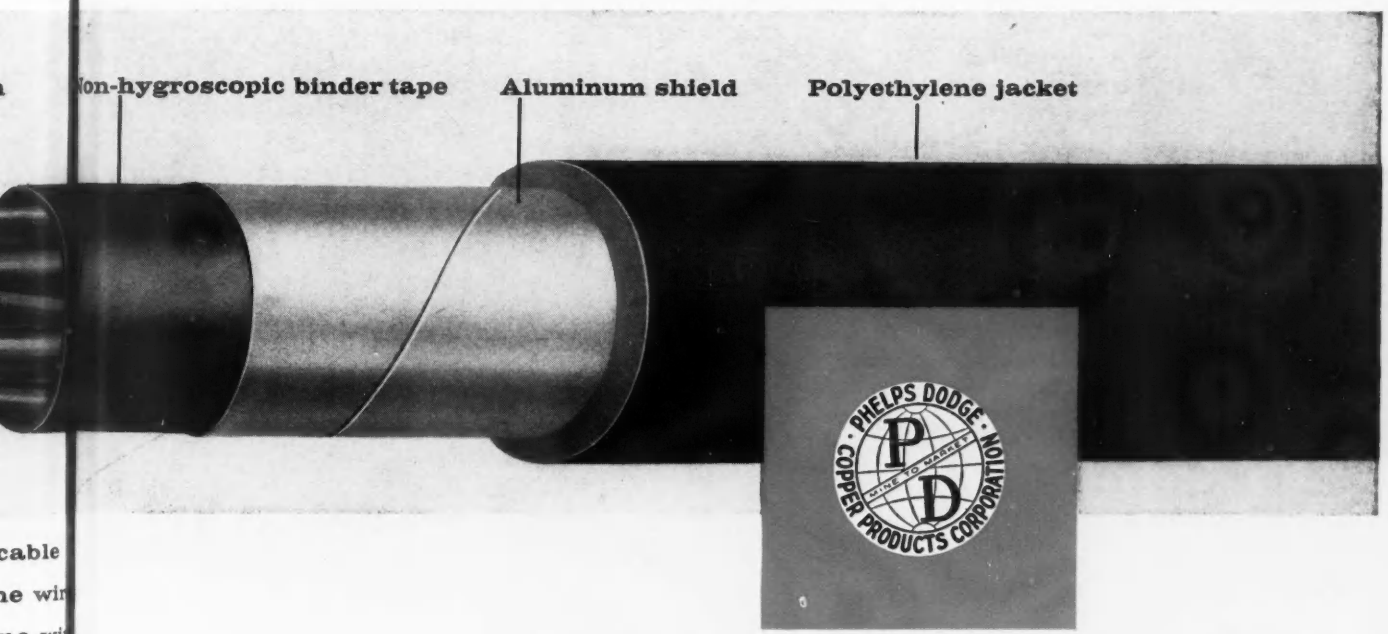
Self-supporting telephone cable
Rural distribution telephone wir
Urban distribution telephone wi
Inside wiring telephone cable

"FIRST FOR LASTING QUALITY—FROM MINE TO MARKE

MINE-TO-MARKET" LINE...

- Soft annealed copper conductors of highest grade copper from Phelps Dodge's own open pit mines.
- Highest quality polyethylene compounds for insulation and jackets assured by top grade materials and Phelps Dodge's vast experience in the plastic wire and cable field.
- Unique "lay pattern" that virtually engineers cross talk right out of the cable.
- Electrically continuous aluminum shielding tape.
- Special non-hygroscopic binder tape of laminated rubber and Mylar* that provides superior dielectric strength between core and shield, extra mechanical protection to the cabled assembly.

**Mylar—Du Pont's polyester film.*



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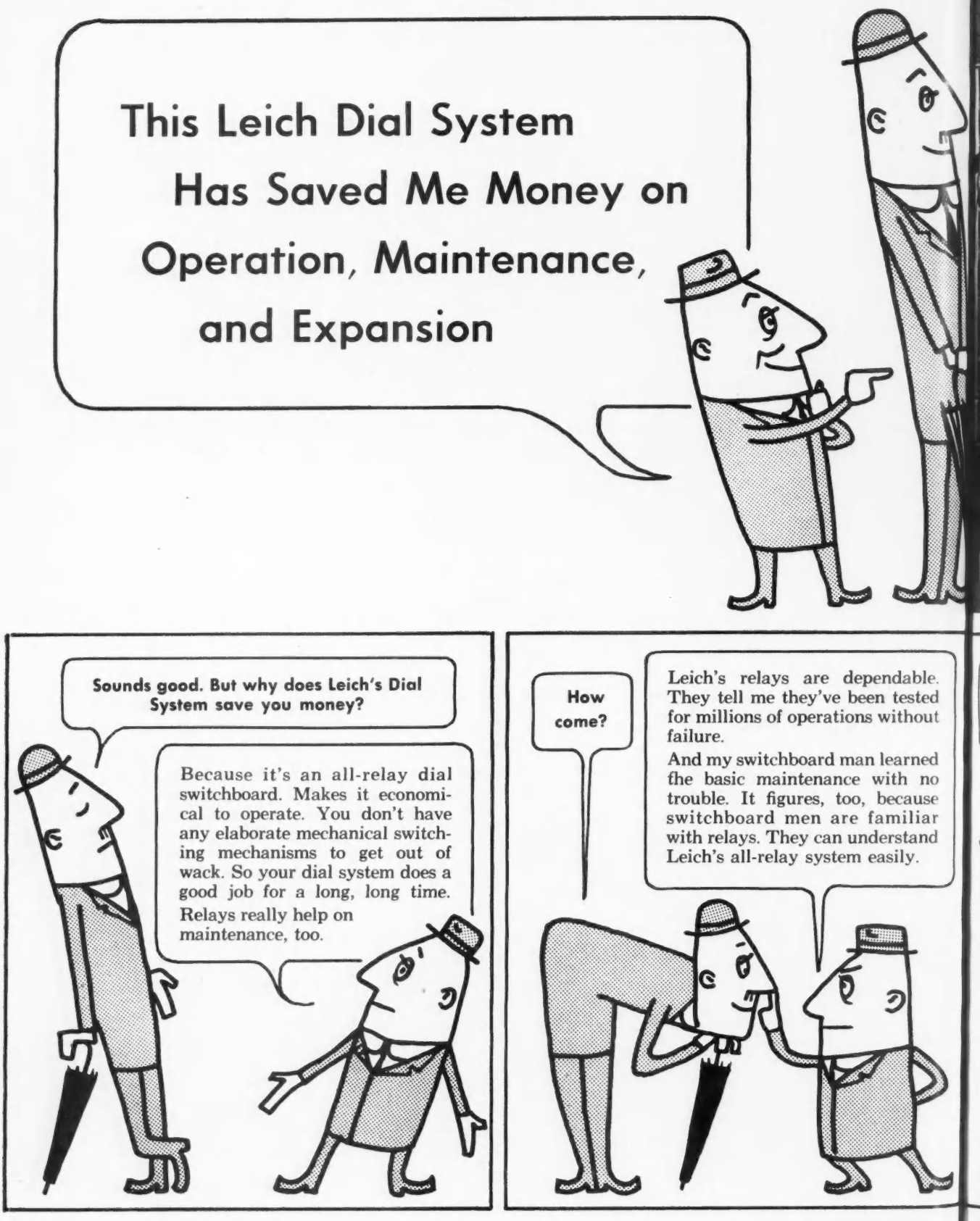
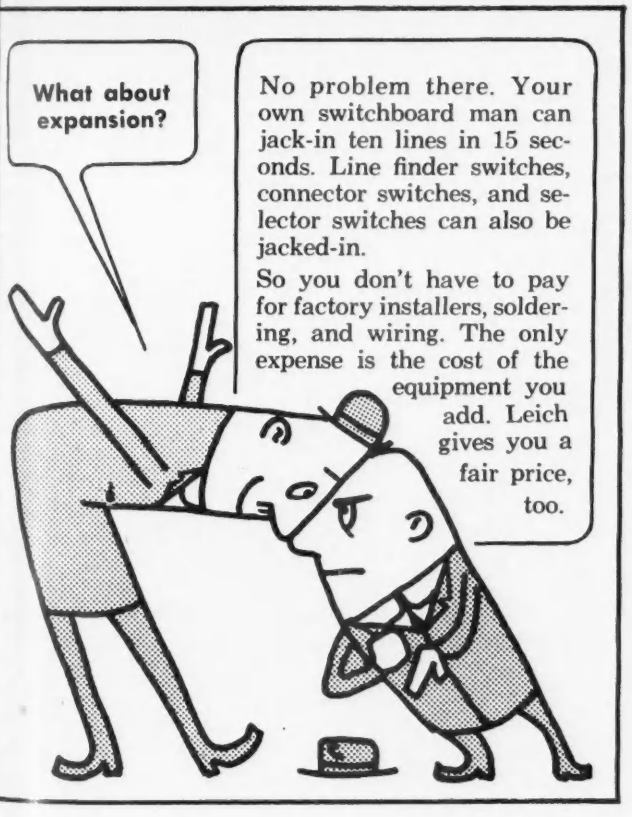
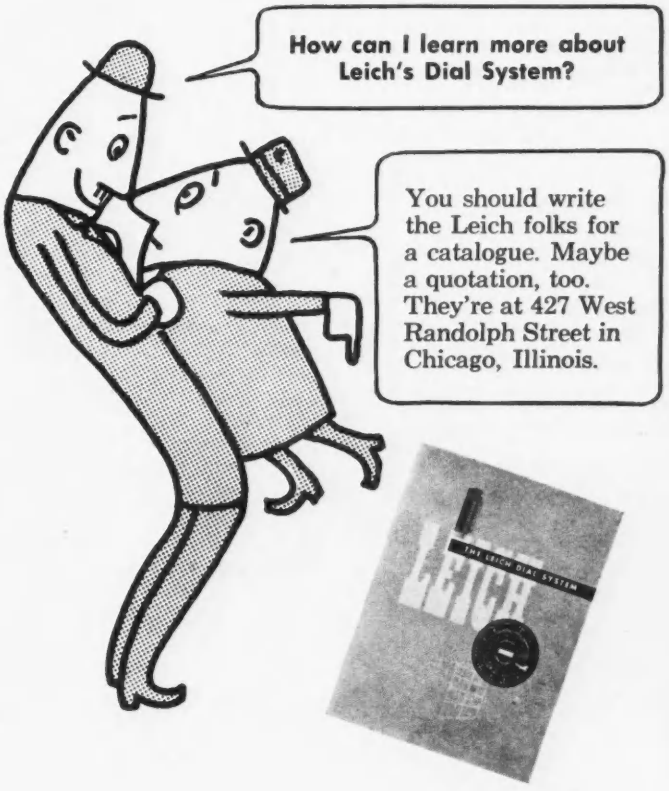

This Leich Dial System Has Saved Me Money on Operation, Maintenance, and Expansion
Sounds good. But why does Leich's Dial System save you money?
Because it's an all-relay dial switchboard. Makes it economical to operate. You don't have any elaborate mechanical switching mechanisms to get out of wack. So your dial system does a good job for a long, long time. Relays really help on maintenance, too.
How come?
Leich's relays are dependable. They tell me they've been tested for millions of operations without failure.
And my switchboard man learned the basic maintenance with no trouble. It figures, too, because switchboard men are familiar with relays. They can understand Leich's all-relay system easily.

LEICH

LEICH SALES CORPORATION, 427 WEST RANDOLPH STREET, CHICAGO 6, ILLIN PA


What about expansion?
No problem there. Your own switchboard man can jack-in ten lines in 15 seconds. Line finder switches, connector switches, and selector switches can also be jacked-in.
So you don't have to pay for factory installers, soldering, and wiring. The only expense is the cost of the equipment you add. Leich gives you a fair price, too.


How can I learn more about Leich's Dial System?
You should write the Leich folks for a catalogue. Maybe a quotation, too. They're at 427 West Randolph Street in Chicago, Illinois.

CH anufacturers of telephones, switchboards and related apparatus since 1907

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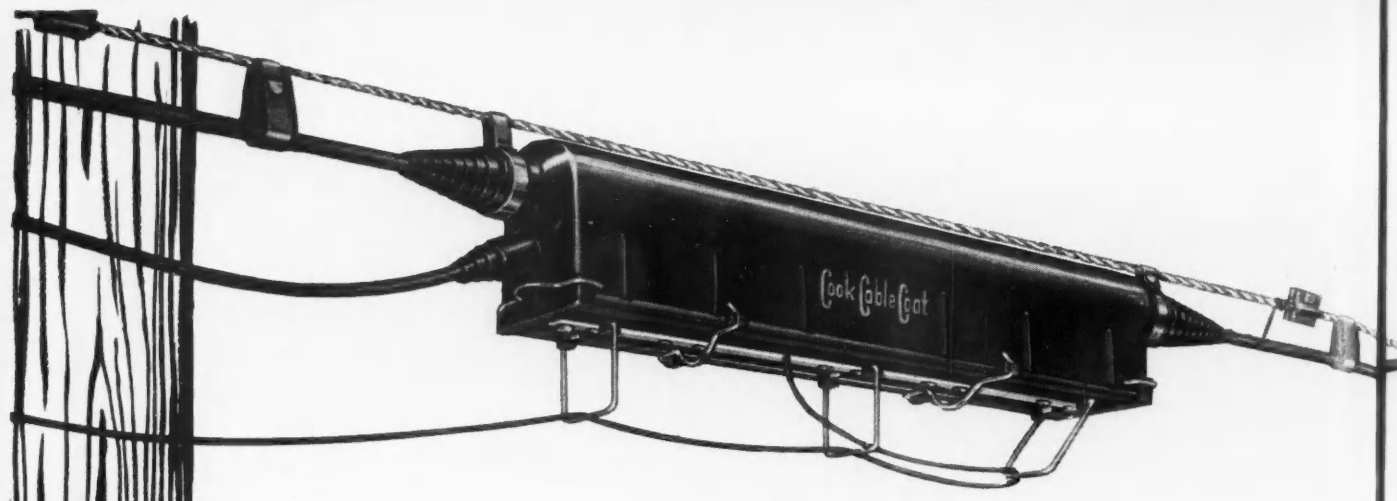
GENERAL SYSTEM



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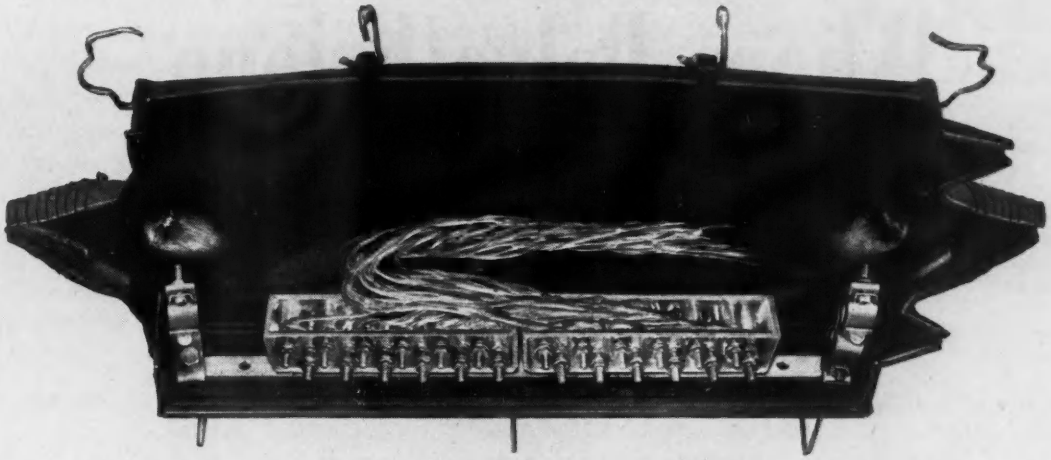
INDEPENDENT TELEPHONE INSTALLATION

VERSATILE, ACCESSIBLE, EASY TO INSTALL

The Cook Cable Coat eliminates the need for:

Taped Splices:	flexible neoprene coat covers the splice area completely, can be opened and reached without damage, at any time.
Potting:	terminal blocks are filled with plastic resin and furnished with stud jumper wires for making cable conductor taps which eliminates the need for cutting and splicing the cable when taking off subscriber pairs. Connections are made by tapping onto the specified skinned conductors.
Optional Protection:	by using protected terminal blocks, Minigap selective pair protection is provided adjacent to the conductor stud, thereby eliminating the need to jumper to a pole mounted protector.



PROTECTED OR UNPROTECTED

Protected Terminal blocks available as well as unprotected. Selective pair protection is provided with either the Cook Minigap or Mytigap Arresters. Protected Terminals available in 6, 12, and 16 pr. sizes; unprotected in 6, 12, 14, 16, 18, and full count of 26 pr. sizes.

OPTIONAL AUXILIARY NOZZLE

The auxiliary nozzle allows for either *wye* branch or terminal splicing, thus increasing the versatility and practicality of the new Cook Cable Coat.

COOK ELECTRIC Company

Since 1897

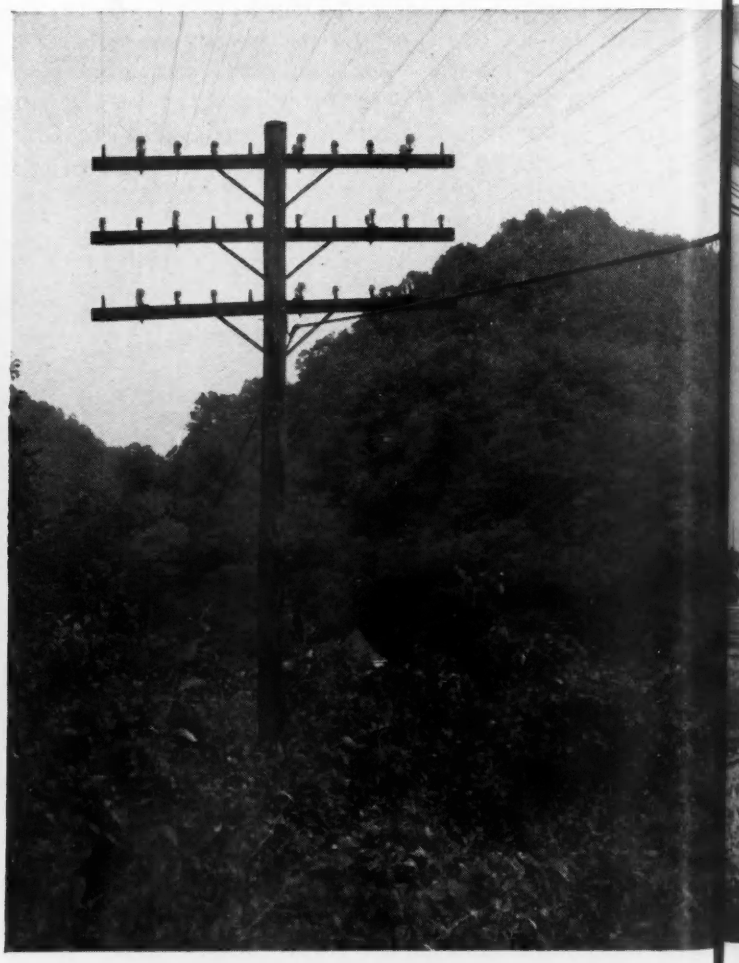
2700 SOUTHPORT AVENUE CHICAGO 14, ILLINOIS

Telephone installations show . . .

Where Polyethylene brings savings

INDIANA—A substantial saving in poles is evident in this rural area. The light weight of cable covered with polyethylene permits smaller poles, longer spans, faster installations. In many cases, cable can be strung without a messenger. Splicing has been greatly simplified.

The polyethylene covering has been found highly resistant to ice formation during the sleet storms common to northern Indiana. Where underground installations are made, polyethylene has eliminated the problem of electrolytic action in the soil. Installations in the near future will have much of this cable plowed underground, at a considerable saving.



WEST VIRGINIA—Installation of additional lines here in the mountains is a costly undertaking. Steep slopes overgrown with trees and brush make rights-of-way practically inaccessible to motorized equipment. In addition, holes for poles must often be blasted through rock.

Most of these problems are solved by distribution wire covered with lightweight polyethylene, now used almost exclusively in this area. This cable can be strung on existing poles, often without adding crossarms. Where lines are strung along railroads and near coal preparation plants, the chemical-resistant polyethylene promises protection from chemical fumes.

These field reports may help you evaluate the economies possible with polyethylene-insulated cable in your own installations. Taken together, they represent many years of experience with BAKELITE Brand Polyethylene under a variety of terrain and climatic conditions.

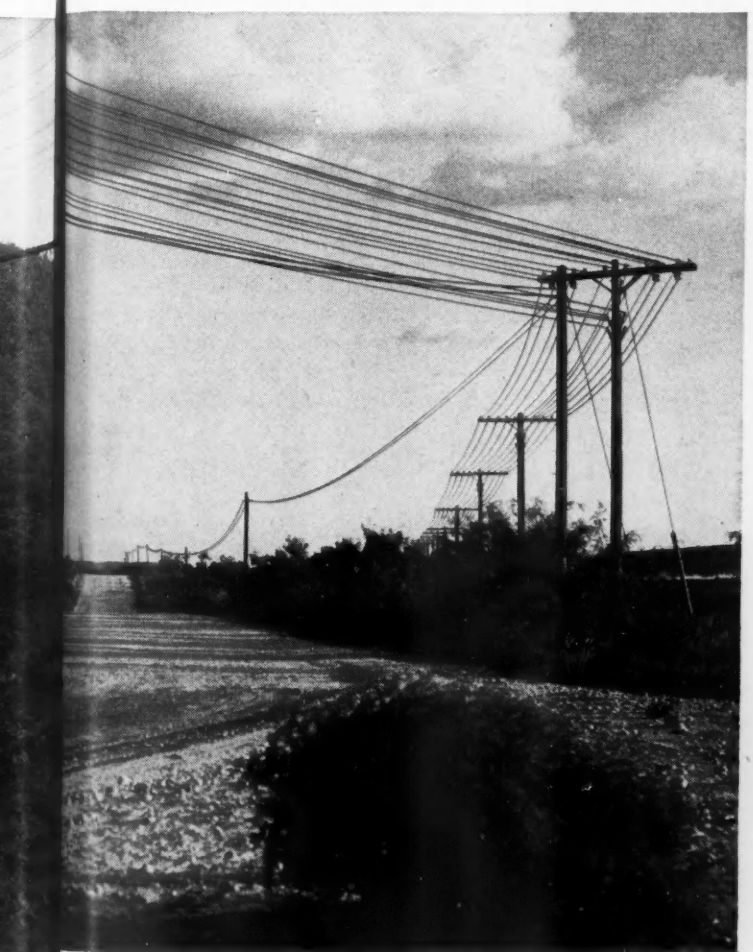
The light weight of this insulation has saved time and effort in installation; in fact, some installations would have been next to impossible with earlier materials. The moisture resistance of polyethylene has minimized weather hazards, while dielectric strength has far exceeded telephone requirements. The strength and flexibilty of polyethylene have simplified cable handling.

The growing acceptance of this material is shown by its use in coaxial cable and signal control cable as well as telephone line wire. BAKELITE Polyethylene satisfies REA requirements for plastic-covered telephone wire, IPCEA specifications for power cable, ASA standards for weatherproof wire, ASTM D1238-52T Type LL, dielectric materials, and IMSA specifications for fire alarm and signal control cable. For more information, write Dept. RH-183

BAKELITE
BRAND
POLYETHYLENE

UNION CARBIDE

BAKELITE COMPANY, *Division of Union Carbide Corporation,* 30 East 42nd Street, New York 17, N. Y.
In Canada: Bakelite Company, Division of Union Carbide Canada Limited, Belleville, Ontario.
The terms BAKELITE and UNION CARBIDE are registered trade-marks of UCC.



TEXAS—These parallel telephone lines illustrate the savings possible with polyethylene-covered cable. Here, the new lines require ⅓ fewer poles as a result of the extremely light weight of the polyethylene.

Over a million pair-feet of polyethylene-covered cable are in service, and 70 million more are on order for this section, where climate ranges from semi-tropic to semi-desert. The polyethylene jacket must withstand heat, cold, wind, icy and arid conditions. When cable is placed underground, as in urban areas, the polyethylene resists corrosion by stray electric currents in the earth.

VIRGINIA—This terrain combines steep slopes and meadowland, much of it covered by sharp rocks. Problems include the difficulty of placing poles, the need to use only "overhead" rights-of-way at many points, and possible damage to ordinary cable covering if it comes into contact with the stony ground.

Under these circumstances, the lighter, tougher, more flexible polyethylene-covered cable was a distinct advantage. It permitted longer spans to stretch from hill to hill without poles in the fields. It was strung through blocks on the messenger in sections impassable to trucks. There was never any danger of its sagging to the ground and being cut on the rocks.

Buy Right Now and . .

SAVE for YEARS

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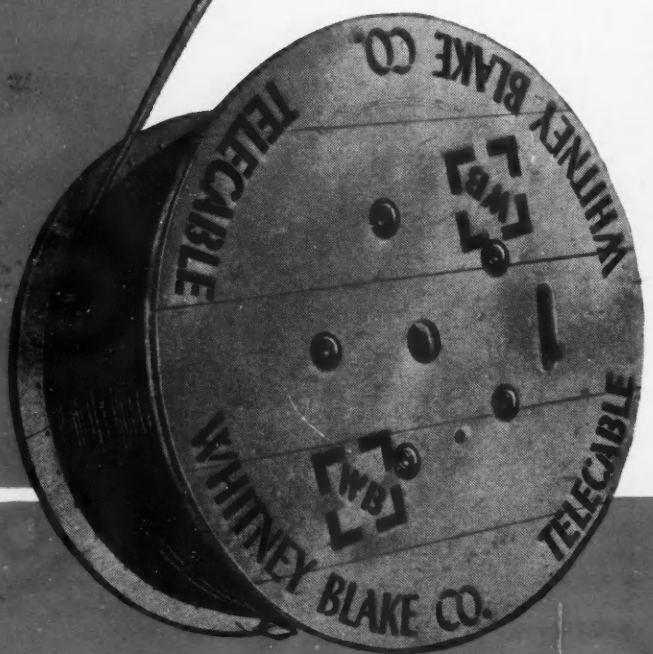
TELECABLE®

THE STANDARD FOR QUALITY AND SERVICE

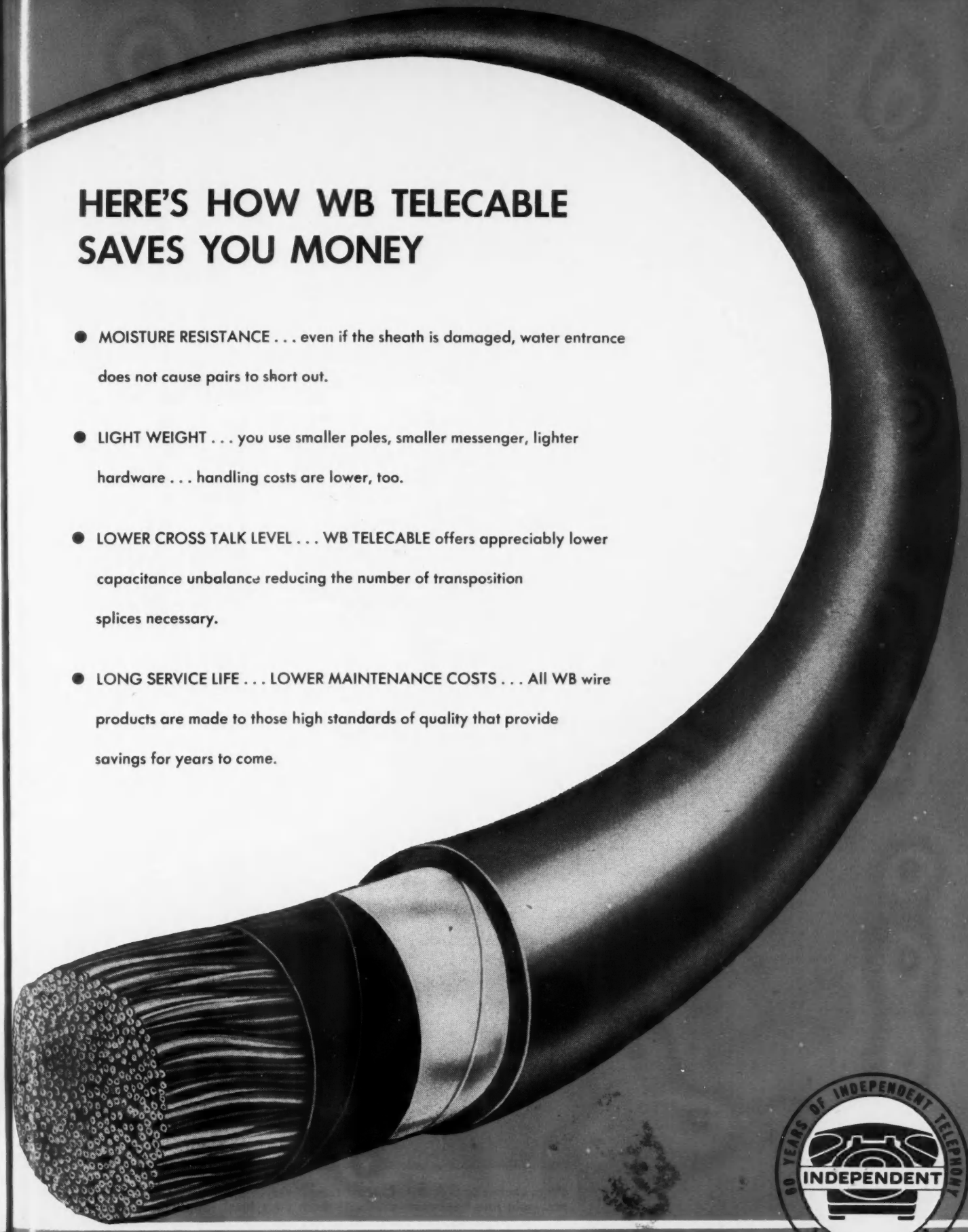


WB

WB has that which others have yet to gain . . . EXPERIENCE

HERE'S HOW WB TELECABLE SAVES YOU MONEY

- MOISTURE RESISTANCE . . . even if the sheath is damaged, water entrance does not cause pairs to short out.
- LIGHT WEIGHT . . . you use smaller poles, smaller messenger, lighter hardware . . . handling costs are lower, too.
- LOWER CROSS TALK LEVEL . . . WB TELECABLE offers appreciably lower capacitance unbalance reducing the number of transposition splices necessary.
- LONG SERVICE LIFE . . . LOWER MAINTENANCE COSTS . . . All WB wire products are made to those high standards of quality that provide savings for years to come.



60 YEARS OF INDEPENDENT TELEPHONY
INDEPENDENT
1891 — 1951

Well Built Wires Since 1899

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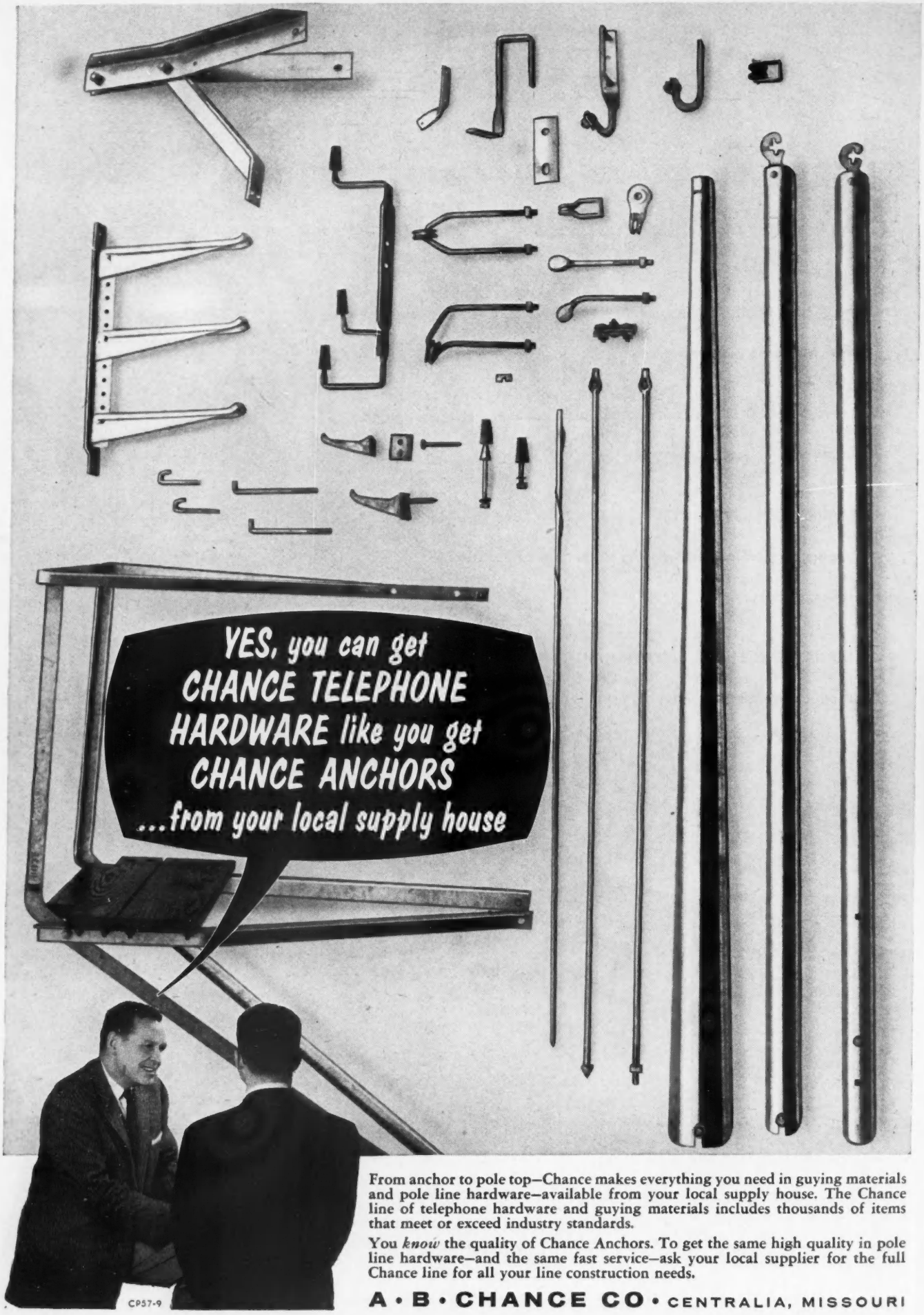
WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT



From anchor to pole top—Chance makes everything you need in guying materials and pole line hardware—available from your local supply house. The Chance line of telephone hardware and guying materials includes thousands of items that meet or exceed industry standards.

You *know* the quality of Chance Anchors. To get the same high quality in pole line hardware—and the same fast service—ask your local supplier for the full Chance line for all your line construction needs.

A • B • CHANCE CO • CENTRALIA, MISSOURI

60 years of Independent Telephony ...a story of towering progress

The 60 years of phenomenal growth of the Independent Telephone Association provides America with one of its more striking success stories.

For many of these years Blaw-Knox has played a vital part in communications. Today, Blaw-Knox Towers are helping the Independents supply dependable, economical service to an ever increasing number of subscribers. Built to rigid specifications, these towers play an important role in an industry that now serves over 9,000,000 telephones in over 10,000 exchanges.

Today, more and more progressive telephone companies are turning to microwave as the newest advance in improved communications. By beaming countless messages through the air, many Independents are boosting service efficiency, trimming operating costs.

In keeping pace with the times, Blaw-Knox Microwave Towers provide the sure support needed for dependable transmission, the wide flexibility required for expansion of microwave facilities.

For additional information, write for Bulletin 2538.

BLAW-KNOX

BLAW-KNOX COMPANY
Blaw-Knox Equipment Division
Pittsburgh 38, Pennsylvania

MICROWAVE TOWERS

Guyed and self-supporting towers for Microwave, AM, FM, TV, Radar, Communications . . . Transmission Towers . . . Parabolic Antennas . . . Special Structures. All custom built to meet your requirements.

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- SERVICE
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Prompt delivery of your order as specified is assured by Lindsay's fast, efficient, personalized service. Lindsay specializes in telephone supplies *only* . . . warehousing a complete line of the finest nationally known brands . . . your guarantee of the best as you want it . . . when you want it.

LOOK TO LINDSAY

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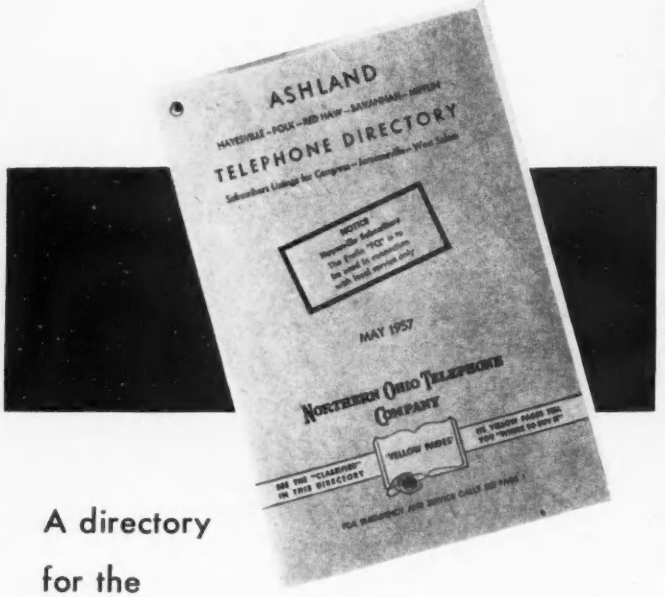

A directory
for the
Northern Ohio Telephone Company

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PAGE LASHING WIRE OF Stainless Steel

You get a neat and long-lasting job every time you use PAGE Stainless Steel Lashing Wire! Ideal for lashing conductor cables (lead or neoprene covered) to a strand messenger by Neale or Western Electric Machine. Coils tailored to fit machine specified.

3 GRADES • EACH IN 2 SIZES (.065 and .045)
Type 430 • for use with galvanized messengers
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Furnished six coils in cardboard carton (minimum order).

Other fine-quality products • You can depend upon PAGE Strand (Stainless or Galvanized Steel) and PAGE Stainless Dead-End Wire • See your Telephone Supply Distributor, or write our Monessen, Pa., office.

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AMERICAN CHAIN & CABLE
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Regional Distributors

Buckeye Telephone & Supply Company, Columbus, Ohio
The Lindsay Telephone Supply Company, Cleveland, Ohio
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Rugged carton protects your Alphaduct Drop Wire in shipping and storage, makes stacking and handling easy and safe. Dense, tough neoprene jacket assures extra long service... *proved* on your own installation by the manufacturing date permanently printed on every length. All Drop Wire constructions can be furnished with Copperweld, Bronze, or Hard Drawn Copper conductors.

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BUCKEYE Carries Quantities of SUPERIOR Telephone Cable in Stock for IMMEDIATE SHIPMENTS to Aid in Your Fall Construction Programs

designed for Superior Performance with Minimum Maintenance

*Irrathene® irradiated polyethylene film, a General Electric product.

All-plastic SUPERIOR Cable is irradiated*, has double the dielectric strength for greater lightning protection! Resistance to moisture, ozone, oils, acids and alkalis makes it ideal for either aerial or direct burial installations! Insulation "graded" to conductor sizes, closely match universal transmission standards for loading coils and terminating equipment! Deviation in mutual capacitance less than 1½%! Accepted by REA and conforms to REA Spec. PE 14.

Available with regular spiral shield (5 mil alum.) or, in certain sizes at slight additional cost, longitudinal shield (8 mil alum.)

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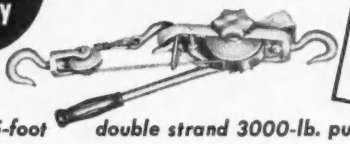
Buckeye Telephone & Supply Co.

P. O. Box 5707 Phone HU 8-0655 Columbus 21, Ohio

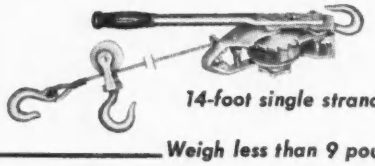
ACCO Quality

Wright Type "R" PULL-A-WAY

Write for Bulletin DH-163B



5-foot double strand 3000-lb. pull



14-foot single strand 1500-lb. pull

Weigh less than 9 pounds

Sturdy · Light · Safe · Economical

Here are some of the fine features of WRIGHT Type "R" Pull-A-Way: Drop forged ductile aluminum alloy frame • Wire hoist cable of maximum strength and flexibility • 8" minimum handle movement—for close hook-ups • 2" drum hub for cable • No oiling needed • Drop forged steel hooks • Removable, reversible "Safety Handle" that bends before any part of hoist is overloaded • Automatic load lowering, with positive control for safety • No slipping brakes • Low first cost • Simple, rugged repair parts easy to install ...factory service never required.

Write our York, Pa., Office for Bulletin DH-163B for full story

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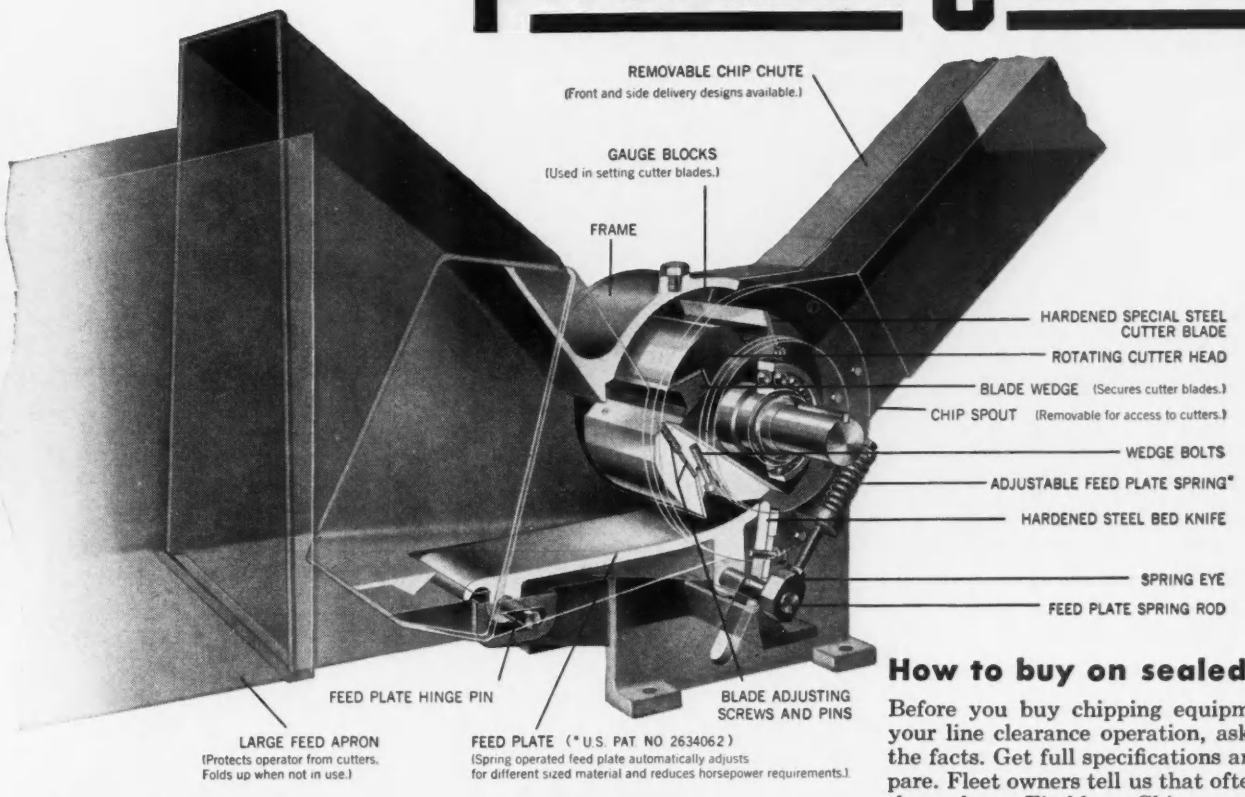
Here's the inside story of time-saving, labor-saving

FITCHBURG CHIPPERS


REMOVABLE CHIP CHUTE
(Front and side delivery designs available.)
GAUGE BLOCKS
(Used in setting cutter blades.)
FRAME
HARDENED SPECIAL STEEL CUTTER BLADE
ROTATING CUTTER HEAD
BLADE WEDGE (Secures cutter blades.)
CHIP SPOUT (Removable for access to cutters.)
WEDGE BOLTS
ADJUSTABLE FEED PLATE SPRING*
HARDENED STEEL BED KNIFE
SPRING EYE
FEED PLATE SPRING ROD
FEED PLATE HINGE PIN
BLADE ADJUSTING SCREWS AND PINS
LARGE FEED APRON
(Protects operator from cutters. Folds up when not in use.)
FEED PLATE (*U.S. PAT. NO 2634062)
(Spring operated feed plate automatically adjusts for different sized material and reduces horsepower requirements.)

How to buy on sealed bids

Before you buy chipping equipment for your line clearance operation, ask for *all* the facts. Get full specifications and compare. Fleet owners tell us that often when they select a Fitchburg Chipper, a smaller model can do the work required. Remember, too, that *only* Fitchburg Chippers are sold with a written ONE YEAR GUARANTEE.

Fitchburg Chippers provide extra *safety in operation*. The exclusive *Fitchburg Safety Spring* assures ease in chipping all wood sizes to the machine's rated capacity. This spring-activated feed plate "gives" with material entering the chipper—protecting the operator in case metal or other foreign material is accidentally fed. Another exclusive feature is the hinged feed apron which can be closed when chipper is not in operation.

Fitchburg Chippers have no heavy fly wheels with their warm up period and resulting disadvantages in start-stop operation. Consequently, there is no danger of clutch strain or frequent bearing failure. Ask your Fitchburg Chipper distributor to arrange a demonstration.

GET FULL SPECIFICATIONS—*Know what you buy*

SPECIFICATIONS: FITCHBURG CHIPPER *(unit guaranteed for workmanship and material for one year.)*

CHIPPING UNIT — MODEL (Trailer Type)	TWC-6	TWC-612	TWC-9	TWC-915
Diameter of cutter head	9½"	9½"	11½"	11½"
Length of cutter head body	6"	12"	9"	15"
Number and length of cutter blades	4—6⅜"	4—12⅜"	4—9"	4—15"
Type of blade	Special High-Chrome, High-Carbon Tempered Steel			
Cutter head shaft size, (diameter)	1¾"	1¾"	2½"	2½"
Shaft keyway size	⅜" x 3/16"	⅜" x 3/16"	⅝" x 5/16"	⅝" x 5/16"
Approximate weight of chipper only	415#	650#	630#	1,000#
Maximum knife setting	¼"	¼"	⅜"	⅜"
Capacity—maximum size round (limbs, etc.)	4½"	4½"	7"	7"
maximum size width (slabs, etc.)	6"	12"	8½"	14½"
All units equipped with exclusive *Fitchburg Safety Spring*-activated feed plates (U.S. Patent No. 2634062)				
POWER UNIT — Gasoline fuel.				
Number of cylinders	4	6	6	6
Cu. In. Piston Displacement	162	226	226	251, 330, or 427
Water Cooled	Yes	Yes	Yes	Yes
Electric starter and generator	Yes	Yes	Yes	Yes
Clutch Power Take-Off	Disc Clutch	Disc Clutch	Disc Clutch	Disc Clutch
Battery	6-volt	6-volt	6-volt	6-volt
Governor	Var. speed	Var. speed	Var. speed	Var. speed
Oil level and pressure gauge	Yes	Yes	Yes	Yes
Water temperature gauge	Yes	Yes	Yes	Yes
Ammeter	Yes	Yes	Yes	Yes
Key ignition switch	Yes	Yes	Yes	Yes

Power Units are the enclosed type, with industrial engines of proper horsepower and torque ratings.

TRAILER UNIT. All welded steel construction. Steel I-Beam axle. Steel hubs with roller bearings. Drop forged ring-type tow bar to fit Army-type pintle hook. Safety chains. Front and rear legs, front retractable jack-type with steel caster, rear adjustable for height. Automotive drop-center type wheels 6-ply Commercial pneumatic tires, ranging from 6.00 x 16 to 7.50 x 16 6-leaf springs of 3,500# capacity. Trailer equipped with combination tail light and number plate bracket, with tail light operated by toggle-switch on motor panel (stop light furnished when required). Tire tread widths range from 63" on TWC-6 to 72½" on TWC-915. Fenders and tool boxes are standard equipment. **EQUIPMENT.** Proper sheaves and high-capacity v-belts. Feed apron, chip spout, side delivery chute, 2-piece truck loading chute with chip deflector. Belt guard. Extra set of cutter blades with each unit. Tools furnished consist of necessary Allen wrenches, handle, 3 gauges, honing stone, can of grease, grease gun adapter. Operating and parts manuals. Fitchburg Chippers supplied with standard gray paint unless otherwise requested.

Specifications subject to change without notice

Some of the many uses for your Fitchburg Chipper: **STORM DAMAGE • PARKS • ROADSIDE CLEARANCE • CHRISTMAS TREE DISPOSAL • DUTCH ELM DISPOSAL • SHADE TREES TRIMMINGS • HIGHWAY CONSTRUCTION**

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Send FREE Fitchburg Chipper Data.

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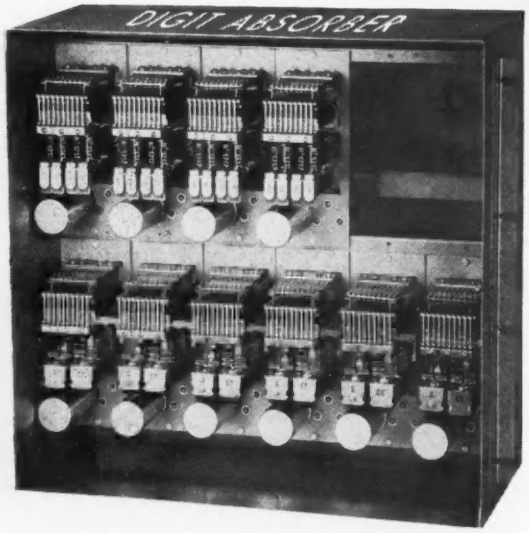
(ADDRESS)

(TOWN OR CITY) (STATE)

Can your Switchboard handle

2-5 DISTANT DIALING?



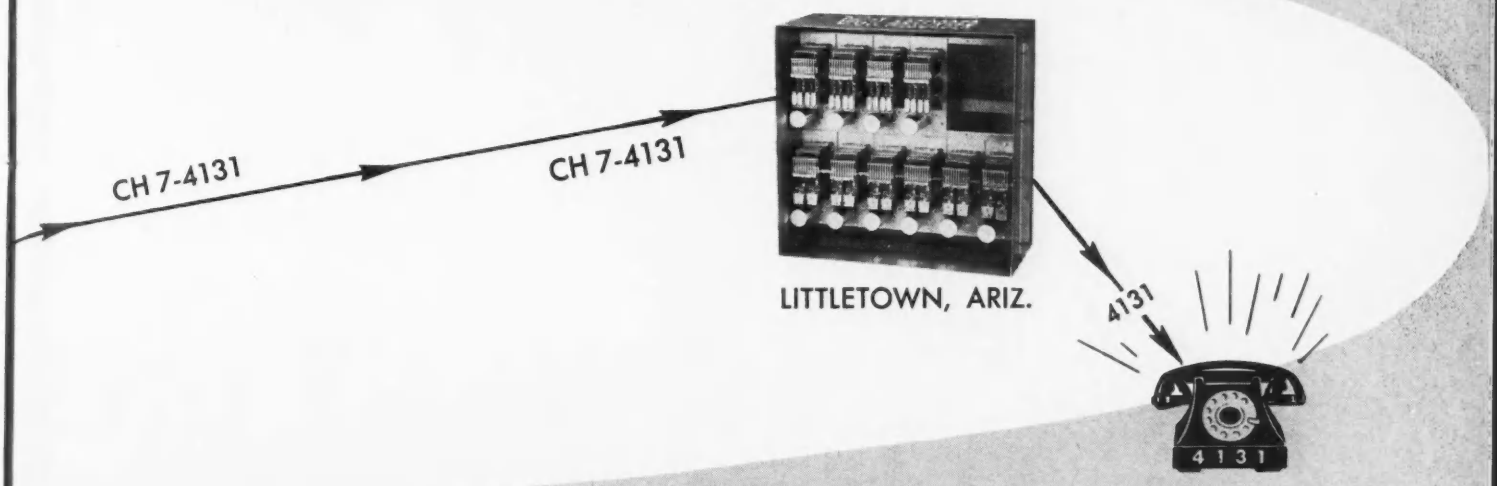
Typical Relay Case for Digit Absorber.

The Universal Digit Absorber employs simple circuity with a magnetic impulse counter, together with other standard relay apparatus of recognized manufacture.

Other UNIVERSAL Telephone Equipment:
Code-to-Selective RINGING CONVERTER
COMPUTER INTERCEPT

INDEPENDENT

It can with a UNIVERSAL DIGIT ABSORBER*



DIRECT DISTANCE DIALING REQUIRES A 2-5 CODE

The nationwide dialing plans for operator and direct distance dialing require that all stations be recognized by a 2-5 code. Few dial switchboards of earlier design have provisions for adding digit absorbing features economically. The Universal Digit Absorber fills this need easily and at nominal cost. Installation requires very little time.

The ever-increasing requirements of Extended Scope Dialing on a universal numbering arrangement are easily handled by the Universal Digit Absorber. The Digit Absorber is a factory assembled, fully-wired, applique unit that can be added to any existing dial switchboard to pad in three digits of exchange code (ABX) or four digits in the case of a small digit dial unit.

There are two types of Universal Digit Absorbers, depending on the complexity of the exchange codes assigned:

*19-S unit will handle exchange codes, as illustrated by AB-X, where the "X" digit is not a duplicate of the "A" or "B" digit.

*19-L unit is required where the "X" digit is a repeat of either the "A" or "B" digit.

In addition, Universal offers a Trunk Digit Register unit which can be applied to "Trunk on Line" dial units where five or more digits are required to be delivered to a 3 or a 4 digit tributary exchange.

*Pat. Pend.

TELEPHONE DIVISION

UNIVERSAL
CONTROLS CORPORATION
OFFICE AND PLANT – CARROLLTON, TEXAS
MAIL ADDRESS – P. O. BOX 13122, DALLAS 20, TEXAS

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A DIVISION OF I T & T
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165 PROSPECT STREET PASSAIC, N. J.

Mail this coupon to the nearest address.

Gentlemen: I am interested in your Universal *Digit Absorber* for 2-5 Numbering.

Name_____

Position_____

Firm_____

Address_____

City_____ State_____

E-10-15

THEY'VE SEEN A WALL PHONE

THEY WANT ONE

YOU CAN GIVE

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OXford 7-5780

1555 West Fourth Street
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Mansfield 7-2816

1594 Southland Circle, N.W.
Atlanta, Georgia
Sycamore 4-2441

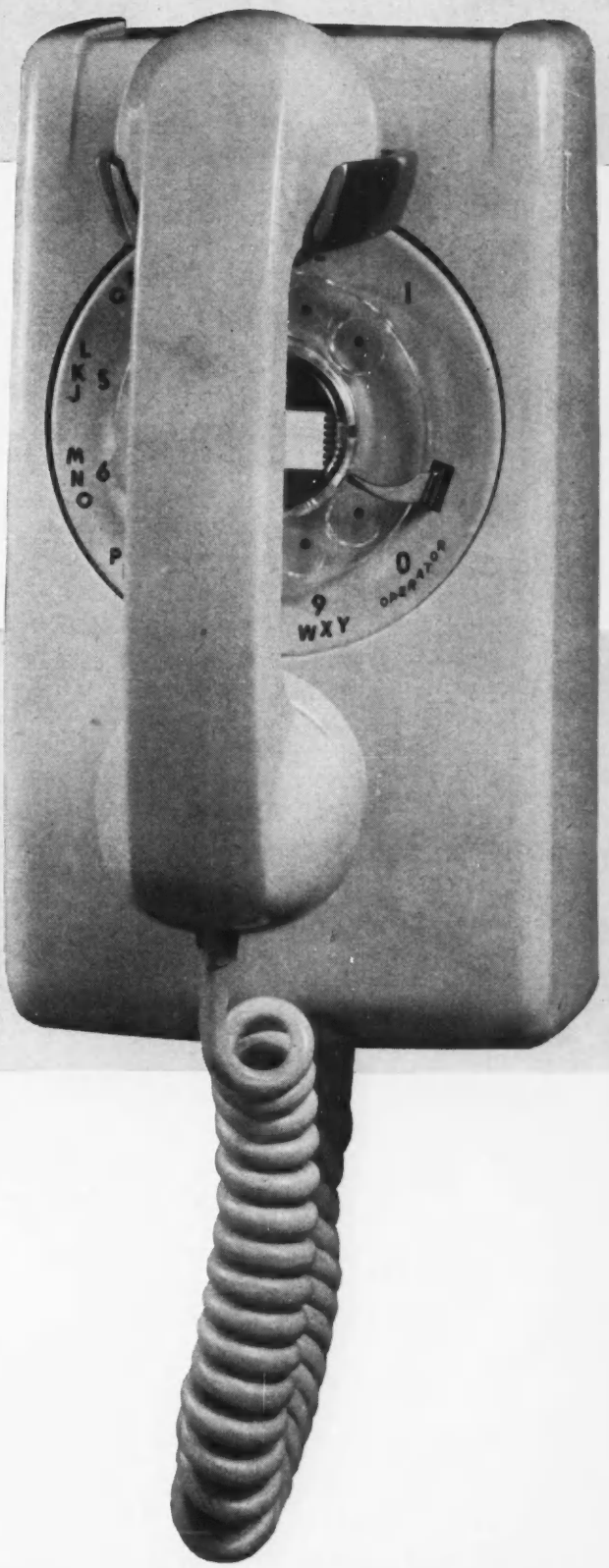
NE IN THEIR FAVORITE MAGAZINES,

E JUST LIKE IT...

E IT TO THEM

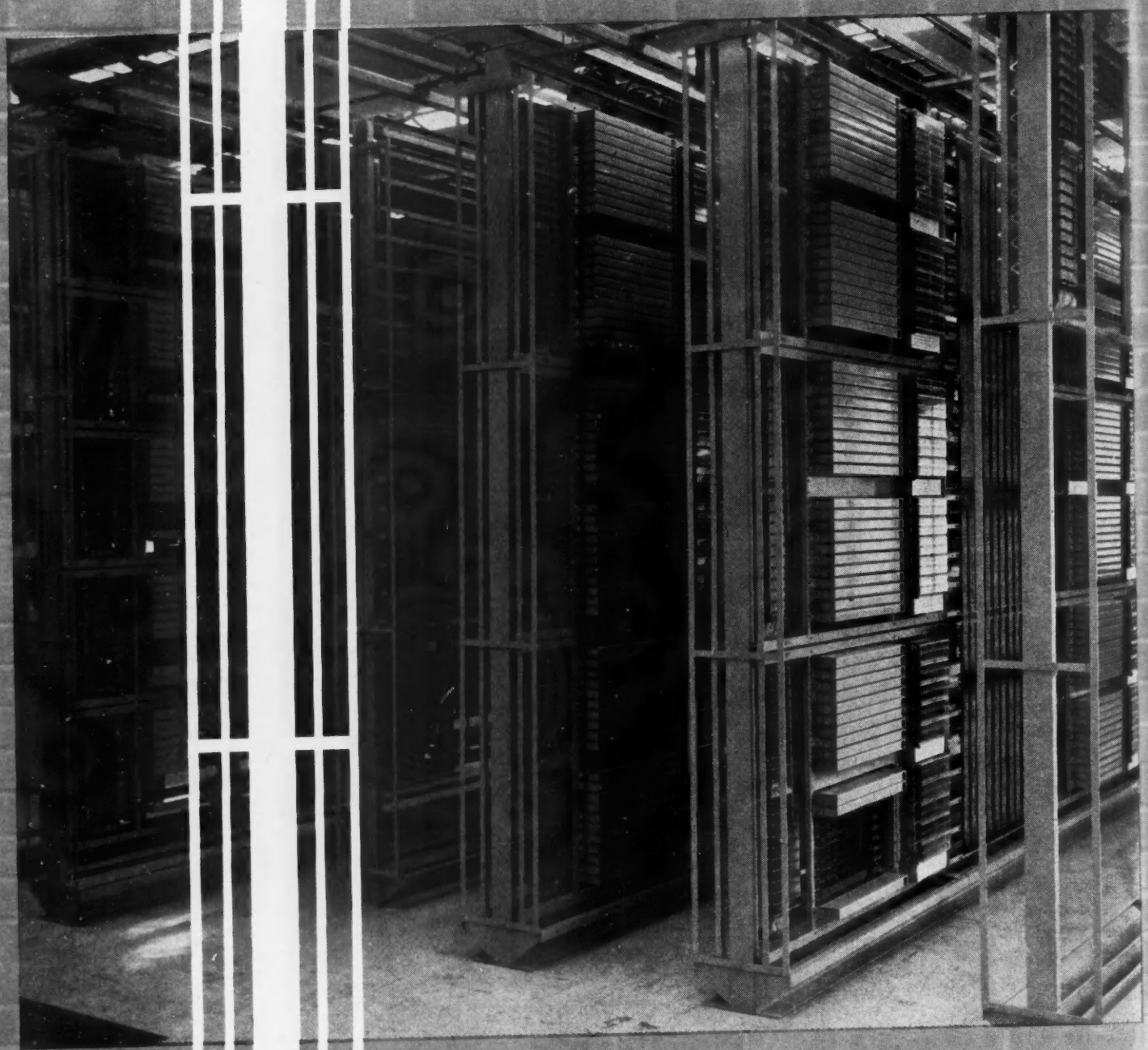
Your customers have been seeing an attractive new wall telephone in their favorite magazines. They have seen it in color ads, and in picture stories about kitchens and recreation rooms. That familiar, neat design is what your customers have in mind when they order a wall phone.

And now you don't have to sell them a different design . . . you can give them exactly what they want, the Kellogg K-500. It is available to you for immediate delivery in 8 decorator colors.



THE KELLOGG K-500 WALL PHONE
IS AVAILABLE IN 8 COLORS

How you can save on building costs w



with XY® Dial switching equipment

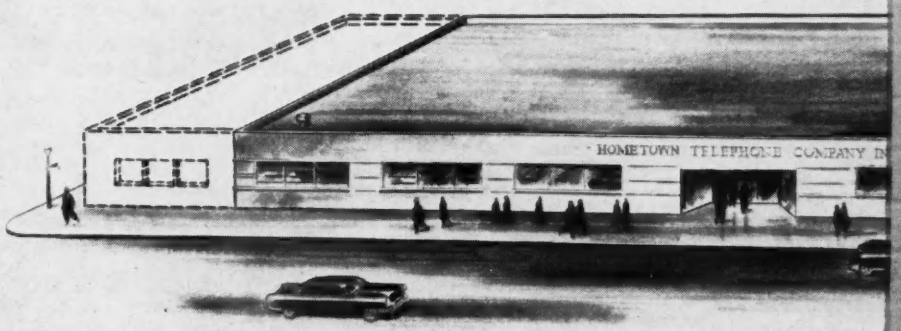
WHEN you invest in new central office facilities, a large part of your outlay goes into the *building itself.*

With construction costs skyrocketing, you'll welcome the substantial savings you get with Stromberg-Carlson equipment because it saves a great deal of space. It saves space *because it is double-sided:* switches and associated circuit plates are mounted on *both sides* of the equipment bay frames.

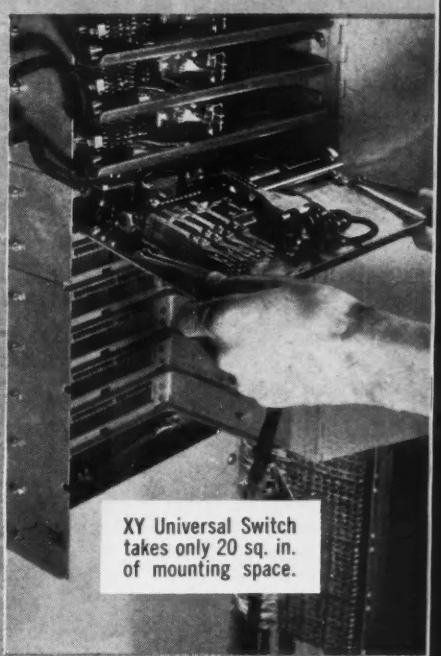
The drawing below shows the actual amount of floor space saved—748 square feet—in a typical XY Dial switching installation.

Other important features of the XY Dial System are: vertical multiple wire banks that need no cleaning or oiling; *welded twin contacts* —22.7 times as reliable as single contacts; the XY Universal Switch that works as a line finder, selector or connector; 100% access to toll; the "Fourth Wire" which performs many extra jobs; wipers that never need changing.

To get the complete XY story, ask your Stromberg-Carlson representative for Booklet T-2003, which describes XY Dial Systems.



In this drawing of a typical XY Dial exchange, area outlined by dotted lines shows amount of space saved (748 sq. ft.) by use of Stromberg-Carlson equipment. When installed, the exchange was equipped for 4,200 lines and 6,000 terminals, with space for up to 9,600 lines and 16,000 terminals. The space saved by use of XY Dial equipment was 13.6% of the exchange's total floor space.



XY Universal Switch takes only 20 sq. in. of mounting space.

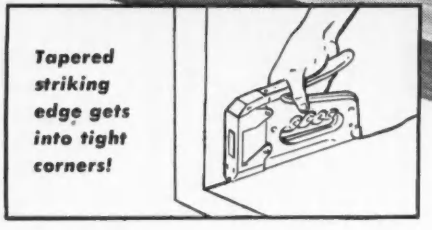
STROMBERG-CARLSON

A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco

One Arrow staple gun fastens them all!

ONLY ARROW'S T-25 STAPLE GUN TAKES 3 STAPLE SIZES TO FASTEN ANY INSIDE OR OUTSIDE WIRE UP TO ¼" DIAMETER!



- T-25 staple gun holds ⅜", 7/16", and 9/16" round crown, rust resistant staples, a full ¼" in width.
- Safe! No short circuits possible automatic mechanism stops staple at right height.
- Short span handle provides comfortable grip – minimizes fatigue.
- Arrow tackers are jam-proof! Can't jam even when struck against metal! Never any lost time on the job. Fully guaranteed
- No wire sag ever! If staple used doesn't hold wire taut, simply use next shorter leg length to insure firm hold and neat job.
- Staple leg lengths are long enough to insure firm hold in wood, plaster or composition board, etc. Tack-pointed staple legs diverge to give even greater holding power.
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T-25 LIST PRICE: **$15.00**

Try Arrow without obligation!

Tackers will be sent on approval for test purposes. Send request to Telephone Division.

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ARROW T-75 FOR ANY INSIDE OR OUTSIDE CABLE UP TO ½" IN DIAMETER!

- T-75 tacker holds 9/16", ⅝" and ⅞" tack-pointed, rosin-coated staples, a full ½" in width.
- Fastens 21 pair inside wiring cable, 26 pair, 12 pair wires, etc.
- Has all above mentioned Arrow features (except tapered head) to insure maximum speed and efficiency of operation!

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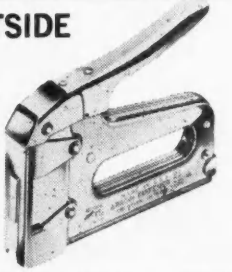
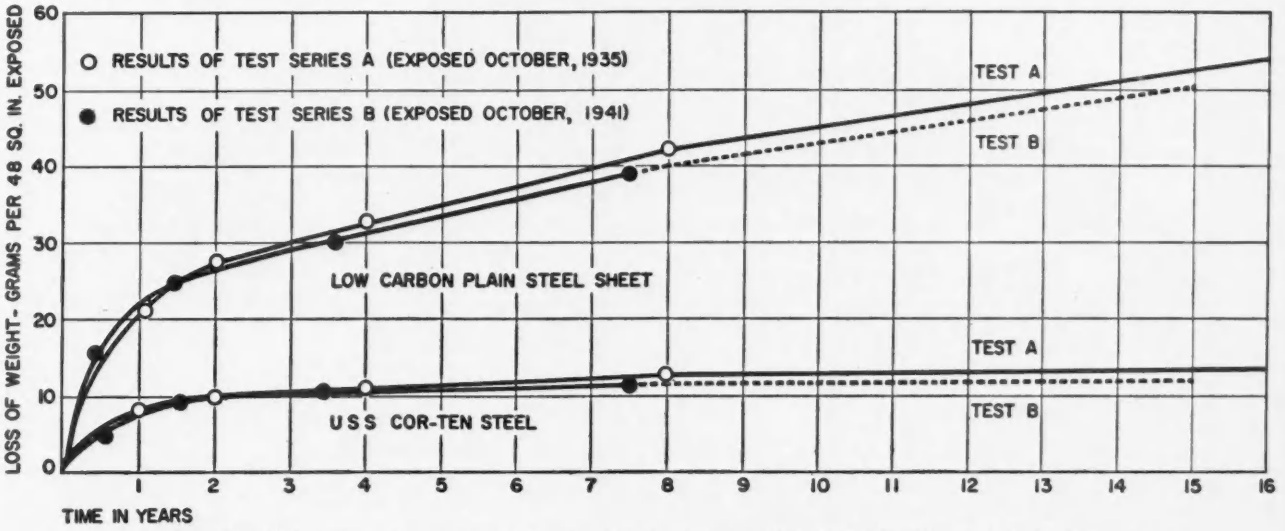


ARROW FASTENER CO. INC. 1 Junius Street, Brooklyn 12, N. Y.

This chart shows time-corrosion curves of two separate tests. During the last 8 years of test A, begun in 1935, the carbon steel corroded at least 8 times more than the COR-TEN Steel. Note that test B, begun in 1941 at the same industrial location, follows almost the exact curve of the earlier test. Other test data warrant extrapolation of test B to 16 years based on the straight line corrosion typical of COR-TEN Steel.



Graph—Examples of time-corrosion curves of structural carbon steel and COR-TEN Steel in an industrial atmosphere.

How Atmospheric Corrosion-Resistant USS COR-TEN Steel Cuts Replacement Cost of Pole Line Hardware

- COR-TEN Steel's Atmospheric Corrosion Resistance is 4 to 6 times that of carbon steel.

- Anticipated Life of COR-TEN Steel Pole Line Hardware is equal to life of a treated pole.

To understand why and how USS COR-TEN Steel cuts pole line hardware replacement costs, you need only consider why pole line hardware needs replacement at all. Conventional hardware made of galvanized carbon steel has adequate strength to begin with. However, when the protective coating is gone, the base metal beneath is exposed to the elements. Gradually, through the ravages of atmospheric corrosion, the hardware literally *loses weight*—and therefore *strength*—to the point of physical failure. How long it will retain sufficient strength to do its job safely depends, of course, upon the atmospheric conditions in the locality. Deterioration will normally be more rapid in a marine or industrial atmosphere than in a rural area. All too often, hardware must be replaced while the treated pole supporting it is still good for many more years of service.

The answer to this problem is obvious—find an *economical* material that has greater resistance to corrosion. That material is available in USS COR-TEN High-Strength Low-Alloy Steel. Not only does it have greater strength than carbon steel, but because of its superior resistance to atmospheric corrosion, COR-TEN Steel Pole Line Hardware should last as long as the treated pole that supports it.

Atmospheric Corrosion Resistance

While its greater strength—50% high yield point—is a definite asset, USS COR-TEN's greatest advantage over carbon steel in hardware applications is its superior resistance to atmospheric corrosion—4 to 6 times that of carbon steel. The reason? Simply this: when first subjected to the elements, COR-TEN Steel forms a smooth, *tightly adhering* coat of oxide scale. This coating, unlike that on carbon steel, clings so tightly to the metal that it tends to shut out the elements, acting as a barrier against progressive attack on the steel beneath and effectively slowing down further corrosion.

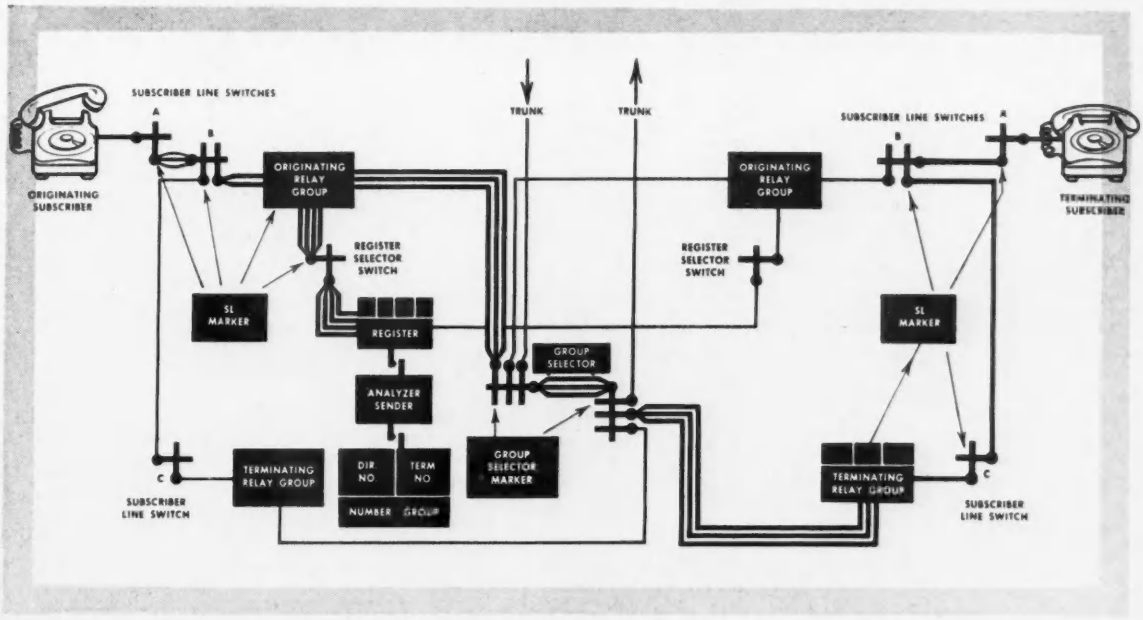
A New Practice

Hardware made with COR-TEN Steel is a relatively new idea. Frankly, it will be several years before the convictions of the first users of COR-TEN Steel hardware will be borne out. However, USS COR-TEN Steel in dozens of other applications time and again has proved its far superior resistance to atmospheric corrosion. COR-TEN Steel railway hopper cars, in addition to constant exposure—as in the case of pole line hardware—are subjected to the pounding and abrasion of millions of tons of coal and coke. Under these conditions, far more severe than pole line hardware has to face, COR-TEN Steel cars are still in service after more than twenty years of continuous use.

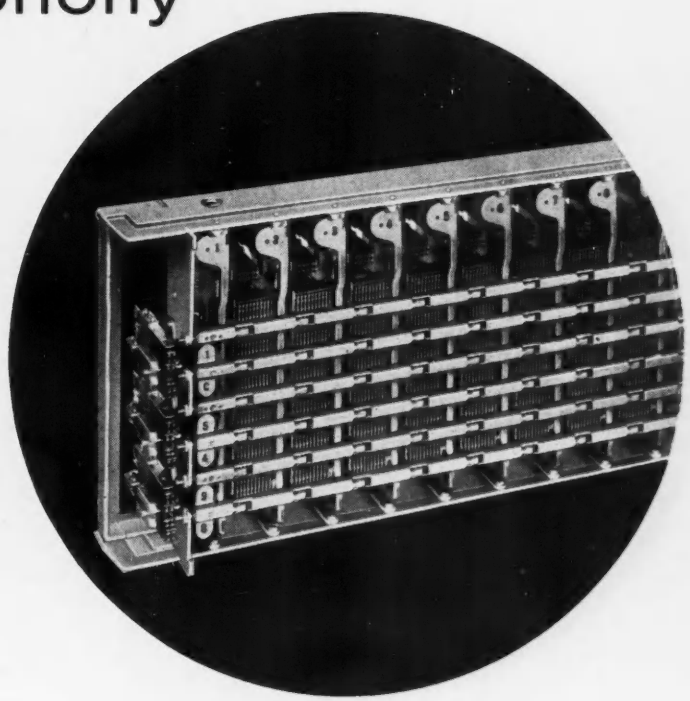
That is why we firmly believe that with USS COR-TEN High-Strength Steel, you will be able to install hardware on a new, pressure-creosoted pole and erase the entire installation from your maintenance budget for as long as the pole is in service. The savings on such superior service we leave to your own slide rule.

Although United States Steel is not a manufacturer of pole line hardware, we produce USS COR-TEN *for* hardware. If you would like the names of companies making hardware with USS COR-TEN Steel, or if you would like additional information on corrosion-resistant hardware, we will gladly send our book, *"USS COR-TEN Steel Pole Line Hardware."* Just write to United States Steel, Room 2801, 525 William Penn Place, Pittsburgh 30, Pa.

North's expanded production facilities devoted to By-Path Crossbar Switch production are among the most modern in the industry.



NORTH by-path crossbar switching opens the door to modern telephony



North is now producing, installing, and cutting over By-Path Crossbar exchanges all over the United States. North By-Path Crossbar is the answer to tomorrow's requirements TODAY.

North By-Path Crossbar Switching enables you to handle all the advanced telephonic services that are fast becoming standard for progressive exchanges—Direct Distance Dialing, Automatic Ticketing, Automatic Line Identification, Call Meter Service, Traffic Recording, and Automatic Routing.

North By-Path Crossbar will provide speedy, efficient handling of peak traffic loads with an absolute minimum of incompleted calls.

North By-Path Crossbar requires less floor space and is readily expandable.

Tested and approved, in use today, NORTH BY-PATH CROSSBAR is universally acknowledged as the most advanced practical telephony switching system.

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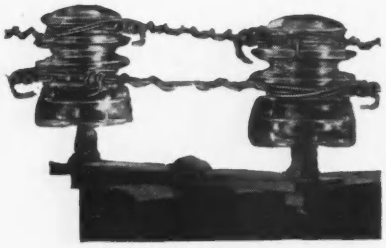
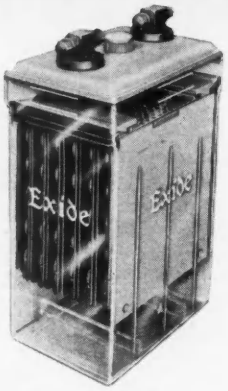
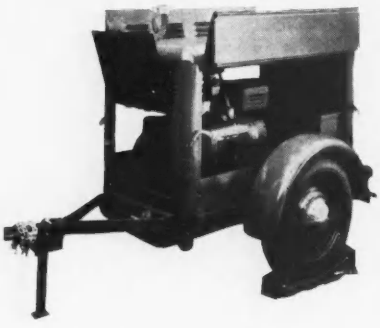


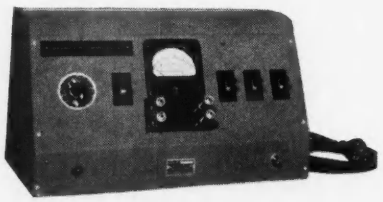
Double-Groove Transposition. Insulator (No. 56) is employed for all circuits (exchange, toll, or trunk circuits) that employ tandem type transpositions. The test of time has proved the high quality of these Hemingray Insulators—a product of OWENS-ILLINOIS.



The Battery That Stays Young for Years. Built right into the Exide-Manchex Battery is a reserve supply of lead that converts automatically to active material as it's needed during the battery's long life. Hence, it keeps its full capacity for years. Exide Industrial Division, THE ELECTRIC STORAGE BATTERY COMPANY.



Maintenance Generator—Equipment includes toolbox, fuel tank, safety chain and chocks, taillight and reflectors, and sheet-metal house with hinged sides, hinged front cover. Available with or without generator —92" long, 53" wide, 51" high. With generator, weighs 800 lbs. S & G MANUFACTURING CORPORATION.



Shallcross #692-A Transmission Test Set. Provides a convenient and an inexpensive means of measuring transmission line losses in 600 ohm lines, switchboard circuits and other equipment. Measures comparative capacitance of condensers, and tests the balance of repeating coils and relays. SHALLCROSS MFG. COMPANY.

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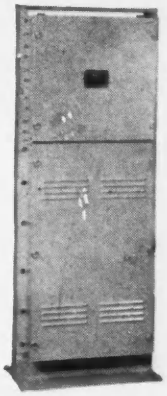
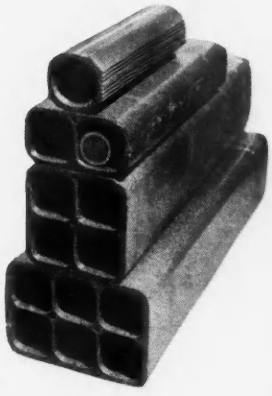
The Time-Tested Steel Strand. A ductile, adherent zinc coating, applied by the famous Crapo Galvanizing Process, provides lasting protection against corrosion in INDIANA STEEL & WIRE COMPANY'S Crapo Steel Strand. Minimum maintenance expense.



H-5 Subcycle for Harmonic Ringing Frequencies. Produces all frequencies in harmonic series, 16⅔, 25, 33⅓, 50 and 66⅔ cycles. Ringing frequencies locked to AC line frequency. Maintenance-free operation. A product of LORAIN PRODUCTS CORPORATION.



Single and Multiple Natco Clay Conduit for the permanent protection of underground telephone and telegraph cables against fire, corrosion, electrolysis, mechanical injury, and chemical attack. Available in 1, 2, 3, 4, 6, 8 and 9 duct sizes—salt glazed or unglazed. A product of NATCO CORPORATION.

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Working on the distribution system for the Trans-Canada natural gas pipeline, this new Barber-Greene Model 774 Ditcher cuts through clay frozen to a depth of five feet at temperatures around 26° below zero.

New ditcher wheels through frozen clay at 26° below zero

Working every day for two sub-zero months, this new Barber-Greene Model 774 wheel-type ditcher was subjected to operating conditions far beyond any likely to be encountered in normal use. It cut through clay frozen to a depth of five feet in temperatures as low as 26° below zero. Only four days during the entire period did the mercury rise above zero.

Operated by G. M. Gest Construction Ltd., Montreal, the new ditcher was put through this grueling test in Manitoba on a vital phase of the Trans-Canada natural gas pipeline distribution system.

Digging 22 inches wide and four feet deep, the Model 774 averaged over three feet per minute in these extreme conditions.

This ditcher is completely new:

- New digging-wheel drive through telescoping shaft, floating differential, and split No. 1 shaft
- New flexible connection between chassis and boom
- New dual-range Hydra-Crowd for fastest crowding in every digging condition
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Write for literature on the most up-to-date ditcher made. 57-9-D

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EDITORIAL

"Emphasis On The Future"

MANY THOUSAND words were uttered by speakers at the recent 60th Anniversary Convention of the United States Independent Telephone Association (USITA). A few of the words referred to the *past*, *some* directed attention to the *present*, and *many* urged consideration of the *future*.

The constant attention of USITA convention speakers with the future served, we believe, to emphasize telephone industry members realize that despite the accomplishments of the past and present the true grading of their work will not be on *what has been done* or *what is being done* but *on what will be done*.

This thought was expressed in many ways by several USITA Convention speakers. It was said with these words by *Fred E. Norris*, General Telephone System's Vice President — Planning & Development: —

"We are living in an age of rapidly changing technology. We must adjust our viewpoints accordingly or soon be outdated. We must be careful not to be complacent about the future. We must aggressively think of ourselves as Communication Companies, not as telephone companies alone. If we don't, many important communication services will be rendered by someone else. . . ."

Michigan State University's Dean of Engineering, *J. D. Ryder*, summed it up this way: —

"It is evident the problems facing the engineer of tomorrow are more difficult and complex than those faced by our predecessors of 50 years ago . . . The easy problems have been solved and we are working at higher orders of difficulty . . . We have begun to learn the backward look educates too often in what cannot be done, whereas the forward look to the future teaches of what must be done. . . .

This deep concern with the future by two USITA Convention speakers — one a veteran telephone man, the other the Dean of Engineering at one of America's leading universities — was echoed by many convention speakers.

Some emphasized new inventions, new ideas, new apparatus. Others warned *"if the industry is to lead instead of follow, its members must be alert to the possibilities new innovations offer for improved service and for more economical operation."*

Mr. Norris touched upon this point when he said: —

"To meet his obligations the engineer must have more than a handbook to rely upon. He must be appreciative of management's problems and objectives. He must be forward looking, creative in his thinking, willing to use modern techniques and materials, and apply good common sense to the problem at hand. . . . The old school of 'do it the way you've always done it, do it quickly and get on the next job' must be challenged. . . ."

This emphasis on *"what must be done"* rather than on *"what has been done"* is all to the good.

It gives substantial evidence to the fact that industry members realize telephone development is not finished, the progress is not over.

Also, it provides evidence that pioneering in telephone communications *is still going on* and *will go on*, and that the future holds even greater promise than the past.

The continuation of such thinking will, we feel sure, be the same priceless asset of the future it is of the present and has been of the past.

We're glad we saw and heard so much evidence of it at USITA's 1957 convention. And we're certain that same thinking will be going strong when USITA holds its 100th annual convention!

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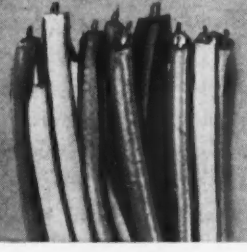
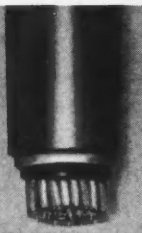
THE MESSAGE IS: MONSANTO

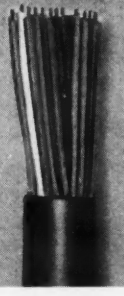
Sturdy OPALON 72285 over primary insulation for color-coded, weather-resistant jacketing. Polyethylene 14202 and 11302 for primary insulation of conductors and insulation for steel support wire in Multi-Pair Distribution Cable.

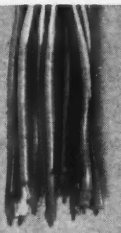




OPALON 1706 for semi-rigid primary insulation in various types of communication cable.

Polyethylene 12203 and 12253 for primary insulation, Polyethylene 14202 for jacketing in jacketed Thermoplastic-insulated, Thermoplastic-sheathed Telephone Cables.





Rugged weather-resistant color-coded OPALON 72285, available in eight standard colors, for primary insulation and Polyethylene insulation for steel support wire on Urban Distribution Cable.

OPALON 1006 for primary insulation, OPALON 72217 for jacketing in Inside Telephone Wiring Cable.

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Here, from one great single-source, are the insulating compounds combining the many different mechanical and electrical properties you need . . . insulating efficiency, extrusion characteristics, surface finish, weatherability, colorability.

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Members of this convention group (l. to r.) are USITA Directors F. E. NORRIS, New York City; L. W. HILL, Tarboro, N. C., and R. A. LUMPKIN, Mattoon, Ill.; and USITA President DONALD C. POWER, New York City.

Independents Meet In Chicago

By JOHN G. REYNOLDS*

Sixtieth Anniversary Convention Attracts Largest Attendance in USITA History. Speakers Put Emphasis On Employe Training.

OVER 3,300 members of the Independent telephone industry moved into Chicago's Conrad Hilton Hotel last week and for three days — October 14, 15, 16 — participated in Independent telephony's biggest event of the year — the annual convention of the United States Independent Telephone Association.

Planned as the grand finale of this year's observance of the 60th anniversary of the birthday of organized telephony, the 1957 USITA Convention lived up to and went far beyond its advance publicity and billing which stated the convention "would be the outstanding meeting of USITA's proud and colorful history. . . ."

Following through on the convention theme — "Independent Telephony — A Vibrant Force in A Dynamic Economy" — speakers at the general sessions and the technical conferences concentrated on considering the impressive promise of present and future developments in communications.

The past history of the Independent telephone industry was suitably honored, but the convention placed its emphasis on the future when Donald C. Power, 1956-1957 USITA president and president of General Telephone Corp., keynoted the meeting with his address at the first general session on Monday, October 14.

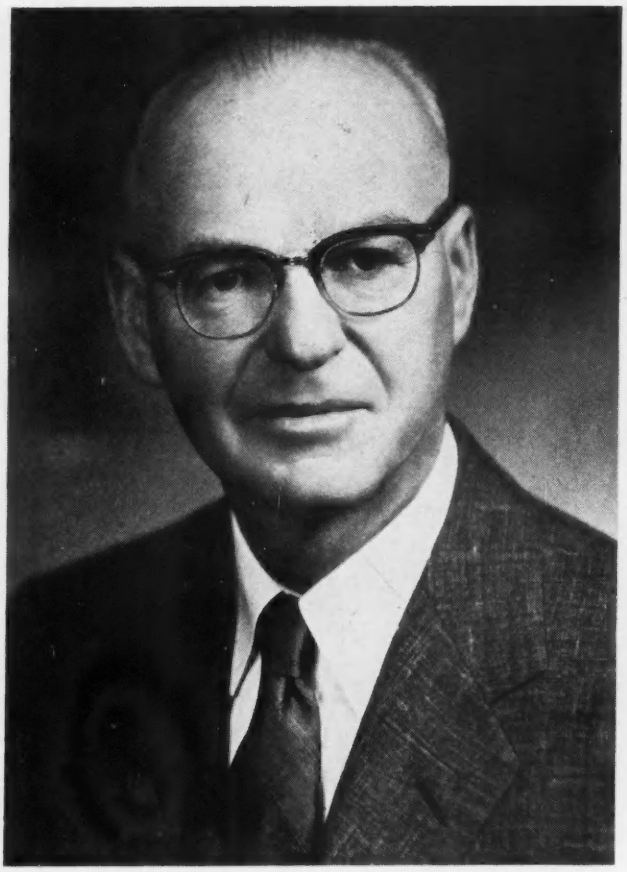
Predicting a "More and More Vibrant Future for Independent Telephony," President Power emphasized that the smaller cities and towns and much of the area principally serviced by thousands of Independent telephone companies are plainly marked for great development in the years ahead.

"The important thing we must keep in mind," he said, "is that when this new business comes our way, as it surely will, we must be ready for it. This is our opportunity and also our responsibility. . . ."

Stating that what is on the drawing board today will move into production tomorrow, President Power warned "It will take an alert and well-informed Independent telephone industry to keep abreast of this march of progress. . . ."

"If our Independent industry is to realize its full potential in a more and vibrant future," he said, "it

Mr. Reynolds is managing editor of "Telephone Engineer & Management."

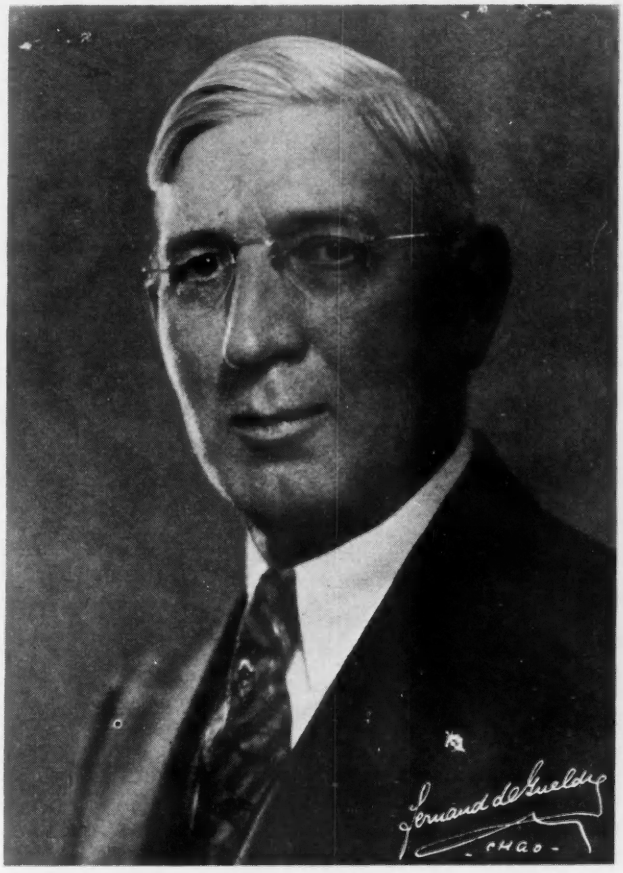


C. W. HAAS, 1957-58 USITA President is president, Big Timber (Mont.) Home Telephone Co.

CLYDE S. BAILEY was reelected executive vice president of USITA at recent Chicago convention.

HUGH A. BARNHART, USITA 1st vice president is president, Rochester (Ind.) Telephone Co.

FOSTER B. McHENRY, USITA 2nd vice president is president Capitol City Telephone Co., Jefferson City, Mo.



H. E. HAGEMAN, USITA 3rd vice president is president Lorain Telephone Co., Lorain, Ohio.

CARL D. BROREIN, USITA treasurer is president Peninsular Telephone Co., Tampa, Fla.

must be a success in every sense of the term. Primarily it must be a success in the public interest. It must give the public what it wants and create public confidence in it as a public servant. . . ."

President Power also emphasized the industry must be a success in providing for the people who work for it.

"It must merit the confidence of its employes," he said, "so to attract qualified men and women to its ranks during a period of increasing shortage and industrial competition for personnel. . . ."

Pointing out that the industry must be a success as a free private enterprise in order to attract the necessary capital to keep plant expansion going at the proper pace, President Power added — "and of course there can be no success if nobody knows about it. A good public relations position is a veritable 'must' in our industry's future. . . ." (*See page* 55 *for Mr. Power's complete address.*)

F. R. Kappel, president of the American Telephone & Telegraph Co., New York City, speaking at the general session on October 14 told the Independents "you have played a vital part in the total accomplishment of the industry and you are certainly doing so today."

Keying his remarks to the subject "Common Goals For Changing Times," the AT&T President warned "the future isn't waiting for us."

"It's rushing right at us," he said. "This country is growing faster than anyone could have believed a few years ago. Along with the growth, people are moving around and changing their ways of living and also their ways of working. And all this moving and changing tends to make communications continuously more important to more people."

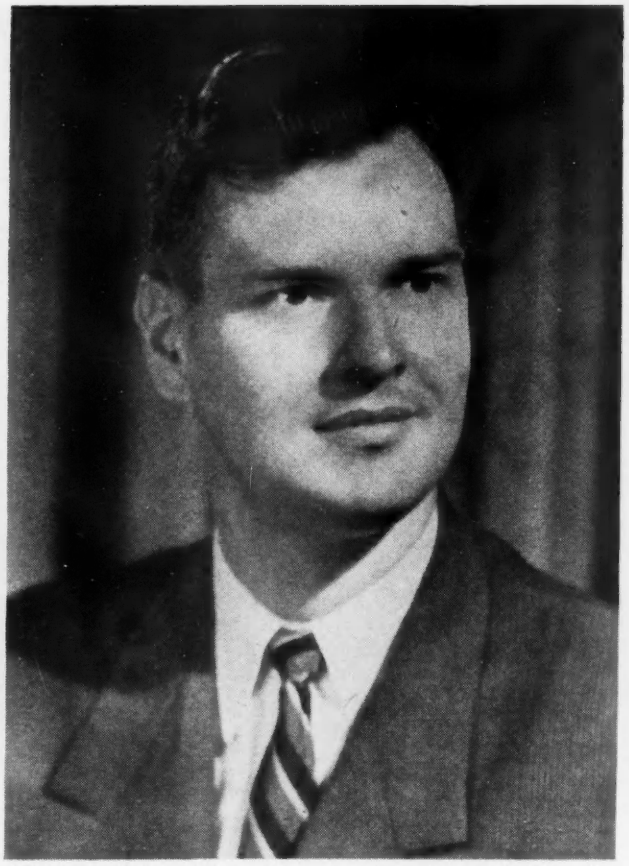
Emphasizing his belief that "we in the telephone industry must meet these changes together, for ours is one single industry and our service is indivisible," President Kappel said, "Far more than in other types of business the progress we make depends on how effectively we combine our efforts. . . ."

"I think this has been growing on all of us year by year," he said. "At any rate, it has been growing on me and I certainly hope it has on you. The basic reason is plain and simple: none of us can serve the community and the country well without the help of others. None of us in the long run can prosper, unless jointly and together we accomplish a fine service job. All of us need each other's cooperation in order to succeed. . . . The big thing is that we're all working on the same job and to do it well we must cooperate. And I think we are. I think we're working together better than we ever have before and I don't see any reason why that shouldn't continue. . . ."

Expressing his confidence in the forward motion of the telephone industry, President Kappel emphasized that "the longer we go, the greater the promise seems to be. . . ."

"The job ahead," he said, "is not partly for you to do, and partly for us in the Bell System to do, but rather all of the job is ours to do together. For it is the kind of service that grows out of this concept that the

GEORGE C. RICHERT was reelected USITA secretary and assistant treasurer at recent Chicago Convention.



COURTNEY S. SNYDER was reelected to USITA assistant secretary post during USITA's recent convention.

public will surely insist on and we must surely deliver. . . ." (*See page 58 for the complete text of Mr. Kappel's address.*)

DURING the business sessions the convention reelected the following directors to serve three-year terms: Harris G. Allen, Milton Junction, Wisc.; Frank S. Barnes, Rock Hill, S. C.; Hugh A. Barnhart, Rochester, Ind.; Thomas A. Boyd, New York City; Donald H. Campbell, Rochester, N. Y.; R. J. Fegan, Junction City, Kans.; Wm. C. Henry, Bellevue, Ohio; S. A. Lane, Russelville, Ark.; Foster B. McHenry, Jefferson City, Mo.; W. Gardner Winters, Houston, Texas.

The membership also elected two new directors: Harold Bollinger, Waconia, Minn., was named to the board to succeed Elnathan C. Gates, Minneapolis, Minn.; and Elmer H. Danner, San Angelo, Texas, was named to the board to succeed Frederic E. Norris.

At the organizational meeting on October 16 the USITA directors elected the following officers: President, Clive W. Haas, president of the Big Timber (Mont.) Home Telephone Co.; First Vice President, Hugh A. Barnhart, president Rochester (Ind.) Telephone Co.; Second Vice President, Foster B. McHenry, president, Capitol City Telephone Co., Jefferson City, Mo.; Third Vice President, Herman E. Hageman, president, Lorain (Ohio) Telephone Co.; Executive Vice President, Clyde S. Bailey, Washington, D. C.; Treasurer, Carl D. Brorein, Tampa, Fla.; Secretary, George C. Richert; Assistant Secretary, Courtney S. Snyder.

Cole Heads Pioneers

MEMBERS of the Independent Telephone Pioneer Association held their 1957 annual meeting on Tuesday, October 15 in the Grand Ballroom of the Conrad Hilton.

With Pioneer President Ralph Lucier, Warsaw, Ind., presiding the Pioneers presented an outstanding entertainment session featuring two nationally famous quartettes — "The Barber-Q-Four" international semi-finalists, and "The Mid-States Four," past international champions of the Society for the Preservation and Encouragement of Barber Shop Quartette Singing in America.

The Pioneers elected three new directors: Ray J. Alter, Galesburg, Ill.; George A. Hearne, Kansas City, Mo., and Kenneth L. Lawson, Lincoln, Neb.

Richard N. Cole, Marion, Ohio, was elected ITPA president for 1957-58. The new vice presidents of the Independent Pioneers are: William P. Strickenburg, Meadville, Pa., and Daniel B. Corman, Glasgow, Ky.

(This is the first section of our USITA Convention story. It has summarized a few of the convention highlights. On the following pages you will find the complete text of addresses presented at the convention by USITA President Donald C. Power; AT&T President F. R. Kappel; John F. Childs, vice president, Irving Trust Co., New York City; Clyde S. Bailey, USITA Executive vice president, and the condensed reports on several of the technical conferences.

USITA Directors (l. to r.): C. C. PEARCE, Riceville, Ia.; HANS KRAEPELIEN, Galion, Ohio; L. H. WARNER, New York City; H. G. ALLEN, Milton Junction, Wisc.; and E. C. GATES, Minneapolis, Minn.

"A More Vibrant Industry"

By DONALD C. POWER*

"The smaller cities and towns, and much of the area now principally served by thousands of our Independent companies are plainly marked for great development in the years ahead. . . ."

MR. CHAIRMAN, distinguished guests, members, and friends of Independent telephony. It is a real pleasure for me to salute all of you at this opening general session of the sixtieth annual convention of your United States Independent Telephone Association. I might say it is a double pleasure because my 12-month tour of duty as your association president, fortunately for me, happened to coincide with the 60th birthday of your national association. This is a memorable event which we have been celebrating for some months and for which special preparations have been made in this convention program.

So, it is with most sincere conviction that I congratulate you and every one at this convention, or elsewhere, who is in any way connected with the Independent telephone industry. As we review the accomplishments of this industry during the past 60 years and consider the impressive promise of present and future developments, we have a right to feel proud that we are part of this spectacular industrial achievement in the public service.

Birthdays, I must confess, always make me feel a little envious. You see I happened to have been born on Christmas day. And while I never have regretted that such an event took place, nor that it took place at that time, it meant that all my life I have had to defer special observance of my birthday because of

*Mr. Power, 1956-57 *USITA President*, and president General Telephone Corp., New York City, presented this address at the 1957 *USITA Convention*.

the general celebration of a very much more important birthday.

While I have always been very delighted to do this, nevertheless, it makes me appreciate an opportunity, such as this one today, to move in on somebody else's birthday — and make it my own, so to speak. And this is the way I feel about this 60th milestone in the history of your USITA.

"Look Ahead To The Future"

PERHAPS some of the Independent telephone men and women here today can share this feeling. Most of us are younger than 60, but many of us have seen, at first hand, and within the span of our own life experience, the growth and happening of various important developments which have made the American telephone industry what it is today.

Those of us from the farm areas have witnessed the steady improvement of service and equipment from the old hand-crank and barbed-wire standards of our childhood to the beautiful multicolored automatic instruments which have become an accepted level of up-to-date service. We have seen long-distance service improve from the old-fashioned shouting contests to the modern commonplace use comparable in every way with local exchange calls. Those of us who were raised in urban areas have seen the density of telephone service increase from one or two telephones in a city block to an average of one for almost every home in the United States.

But as you all know there are different ways, figuratively speaking, to celebrate birthdays. Some people, who like to live only in the present, celebrate with candlelight. You blow them out and eat the cake and that is all there is to it. Others like to use taillights, so as to keep looking back at the past and to reminisce about the road already traveled. But there is a third way — and that is to use headlights — to look ahead and see where we are going as well as where we are.

Saluting the past is, of course, a proper part of our industry's birthday celebration. We must do this to give due credit to those who have labored in the past.

It is most fitting, therefore, on this festive observance in the history of your National Independent Association, that we pay honor and respect to those who made present achievements possible. I refer to our pioneers, those who have gone before us — as far back as 1897 when a handful of determined, courageous, and far-sighted Independent telephone men put together the great national organization which meets today.

And I refer also to those who may not have been industry leaders in the sense of occupying executive or official positions of Independent companies. There is honor enough to go around to all of them — the inventors, the manufacturers, the technicians, the professional specialists, and that great army of loyal and dedicated employes, linemen, operators, and all the others.

To them we pay tribute on this anniversary, because to them we owe the firm foundation and sound construction of the Independent telephone industry as we now know it. They have done their job. We who are here today still have ours to complete. And if we want to match the record of their performance, we must, in turn, look ahead to the horizons of the future.

DONALD C. POWER, 1956-57 USITA president, and president General Telephone Corp., New York City.

The "Headlight" Approach

IT IS ABOUT that that I would like to deal mainly in my talk with you today. I would like to use the "headlight" approach to our birthday celebration to view the horizons of the future of the Independent telephone industry from this vantage point of our 60th anniversary. I will not attempt to predict or assume any powers of prophecy. Let us simply discuss our industry's outlook on the basis of circumstances which exist and trends which are already well known to all of us.

First of all, let us consider the most obvious and elementary question — Does the Independent telephone industry have any future? I think we could find our answer to that in the words of the theme song of that popular musical comedy of a few years back — "Oklahoma." Most of you will remember them, I am sure:

"Oh, what a beautiful morning.
Oh, what a beautiful day.
I've got a wonderful feeling
Everything's coming my way."

Yes, my friends, we have every reason to believe that things are coming our way and that there is a great future in store for the Independent branch of the telephone industry. The trend of population and business growth towards the service areas of our Inde-

pendent companies has been pointed out so many times that I think we need not dwell on any statistical review at this point. We know it to be a fact.

The smaller cities and towns, and much of the area now principally serviced by thousands of our Independent companies, are plainly marked for great development in the years ahead. The important thing we must keep in mind is that, when this new business comes our way, as it surely will, we must be ready for it. This is our opportunity and also our responsibility. For, as we all know, there never was an opportunity without a corresponding responsibility.

In preparing ourselves to make the most of these opportunities, I cannot think of a single over-all instrument of assistance for the Independent companies, particularly the smaller companies, more effective than your national association — the USITA. So, it necessarily follows that if the Independent industry is in line for a great future, the USITA is likewise promised a great future. There will be much important work for it to do.

I would like to say at the outset that the prospects are not all rosy, by any means. There are darker and deeper tones, as well as bright spots and silver linings. One of the darker tones certainly is the shadow of inflation which has been moving across our national economy for the past decade at an accelerating pace. Inflation is an elusive as well as a delusive phenomenon. Just when we think we have a promising program all figured out, a boost in operating expenses (including wages, materials, construction, or taxes) cancels out the benefits we hoped to receive.

The "Erosion In Earnings"

WE CAN ALSO deceive ourselves with optimistic figures showing, for example, that our gross national product is going to increase by so many percentage points in such and such a year in the future. And then we discover that much of the dollar increase is merely to be accomplished at the expense of the lost purchasing power of the dollar. It is only the increase in net purchasing power of the dollars, which our industry expects to earn in the future, which really counts. Merely increasing the number of dollars we take in, while at the same time increasing the number of dollars we pay out in higher prices, can become an elaborate form of kidding ourselves.

Public utilities, in particular, because of their rigid rate controls are especially vulnerable to this kind of erosion in real earnings — due to inflationary dilution of revenues. They can suffer serious financial injury unless ways and means can be discovered to protect their earning position in terms of actual purchasing power. To permit ourselves to be lulled by rosy inflationary prospects, spelled out only in terms of deteriorated dollars, could put our industry in the position of the little boy I heard about who was ordered by his father to get rid of a puppy because he had too many pets already.

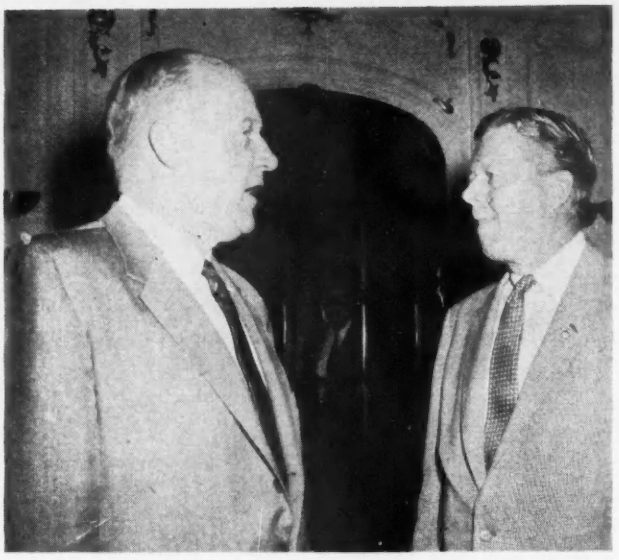
Please turn to page 87

USITA Directors (l. to r.) E. M. BLAKESLEE, Santa Monica, Calif.; DONALD H. CAMPBELL, Rochester, N. Y.; and L. H. MEYER, Fort Wayne, Ind.

USITA Directors standing (l. to r.): FOSTER B. McHENRY, Jefferson City, Mo.; R. J. FEGAN, Junction City, Kans.; F. S. BARNES, Rock Hill, S. C.; C. W. HAAS, Big Timber, Mont.; Seated (l. to r.): H. E. HAGEMAN, Lorain, Ohio; W. G. WINTERS, Houston, Texas; S. A. LANE, Russelville, Ark.; and W. G. WRIGHT, New York.

A. D. SCRIPTURE, CHESTER H. LOVELAND, RUSSELL LOVELAND, E. S. GERMAIN, PETER A. NENZEL, all of California Water & Telephone Co., San Francisco, Calif.

RALPH LUCIER (left), retiring president Independent Telephone Pioneer Association receiving scroll commemorating his service to Pioneers from ITPA President Elect RICHARD N. COLE, Marion, Ohio.



ROY SIEMUND, Benson, Ariz. (left) greets EMMETT SWANSON, Erie, Pa., during USITA Convention. The meeting held at the Conrad Hilton Hotel, Chicago, was attended by over 3,300 members of the telephone industry.

Common Goals For Changing Times

By FREDERICK R. KAPPEL*

IT IS A GREAT HONOR to be here and I appreciate it very much. However I'd say it was something much more important than an honor. This industry of ours has work to do, and goals to reach, that are extremely important to the nation. It is up to us to provide the very best in communication service, and to equip ourselves physically and financially, as well as with all the human skills we need, to accomplish the most we can in the public interest.

And I think that in inviting me here today, you are saying in effect that to do these things, we in the telephone industry must get together, think together, and plan and work together. In fact I'm sure that is why you asked me. You can be just as sure it is why I came.

I congratulate the U.S.I.T.A. and all its members on 60 years of progress. You have played a vital part in the total accomplishment of the industry and you are certainly doing so today. No one could say this more sincerely than I do.

The way things are going nowadays, however, none of us has much time to be looking back. The future isn't waiting for us. It's rushing right at us. This country is growing faster than anyone could have believed a few years ago. Along with the growth, people are moving around and changing their ways of living and also their ways of working. And all this moving and changing tends to make communications continuously more important to more people.

That's half the story. The other half is that we who provide communication service have more and more to offer. We're getting an assortment of tools to work with that are almost beyond belief. New instruments, new switching, new transmission systems — these are producing all kinds of new possibilities in service.

"New Responsibilities"

TODAY AND TOMORROW our industry can provide ever-increasing convenience in communications.

**Mr. Kappel, president of the American Telephone & Telegraph Co., New York City, presented this address at the 1957 USITA Convention.*

More and more we can tailor-make our voice services to meet individual needs and tastes. In addition, teletypewriter service can do a growing variety of jobs. We're putting in circuits and developing equipment to handle great volumes of high-speed data communications. We also have the prospect of providing picture channels for many purposes, in addition to networks for television broadcasting.

In short, I'd say the future offers opportunity unlimited. But in the same breath I'd also say we have new responsibilities to match.

What does it mean, for instance, that the telephone companies of the nation can offer their customers a broader range of services and a wide choice of instruments?

For the folks we are serving, naturally it means they are more free than ever before to look the situation over and pick out what suits their particular needs and tastes.

This is fine and as it should be. But let's not forget that giving the customer this range of choice means first of all that we have more decisions to make ourselves. It means too that we assume greater risks. The first important fact about every new service and every improvement of service is that it calls for good, sound, management judgment on our part.

If we're going to answer more needs, first we shall have to answer more questions — questions like these:

How broad is the market? How fast shall we build for it? How much investment will be needed? How do we best promote and sell the service? And over and over again — as we grow, and as our risks increase, how do we make sure we grow at a profit?

So my first thought is simply this:

We have a tremendous future in this telephone industry, but it isn't going to be realized on technology alone. Transistors and computers and wave guides and all these things the scientists discover are wonderful. We couldn't do without them. However they are not Aladdin's lamps. We can't just rub a transistor and make a wish and expect it to come true. The fact is that to take advantage of our new communication tools — to realize all the wonderful opportunities they open up — requires us as managers to do a better job of managing than we have ever done before.

I'm sure too that the great changes which are taking place, both outside and inside the industry, will closely affect every one of us. Nobody is immune to progress. This may be disconcerting at times but we had better accept it.

Nowadays jet planes don't wind their vapor trails through any particular part of the sky. The man with the oil drill may turn up almost anywhere, and the woods are full of highway surveyors. I don't mean that every hamlet is going to be a suburb, or every pasture a factory branch. But there aren't very many places that come with a no-change guarantee. In the world we live in today, most anything can happen, anytime, anywhere.

FREDERICK R. KAPPEL, president, American Telephone & Telegraph Co., New York City.

Meet The Changes Together

AND THIS it seems to me is crystal clear: we in the telephone business must meet these changes together, for ours is one single industry and our service is indivisible. Far more than in other types of business, the progress we make depends on how effectively we combine our efforts.

I think this has been growing on all of us year by year. At any rate, it has been growing on me and I certainly hope it has on you. The basic reason is plain and simple: none of us can serve the community and the country well without the help of the others. None of us in the long run can prosper, unless jointly and together we accomplish a fine service job. All of us need each other's cooperation in order to succeed.

As times goes along this situation tends to become more pronounced, rather than less. Distance dialing is one of the factors but only one. In more and more places we live and work in each other's laps. We mesh closer and closer together. When big customers want special services, we must jointly provide them. We share rate problems and directory problems as well as service operating problems.

Now I'm not going into a lot of detail on this subject. You know the details anyway. The big thing is that we're all working on the same job and to do it well we must cooperate. And I think we are. I think we're working together better than we ever have before, and I don't see any reason why that shouldn't continue.

Of course most of us are all in favor of cooperation

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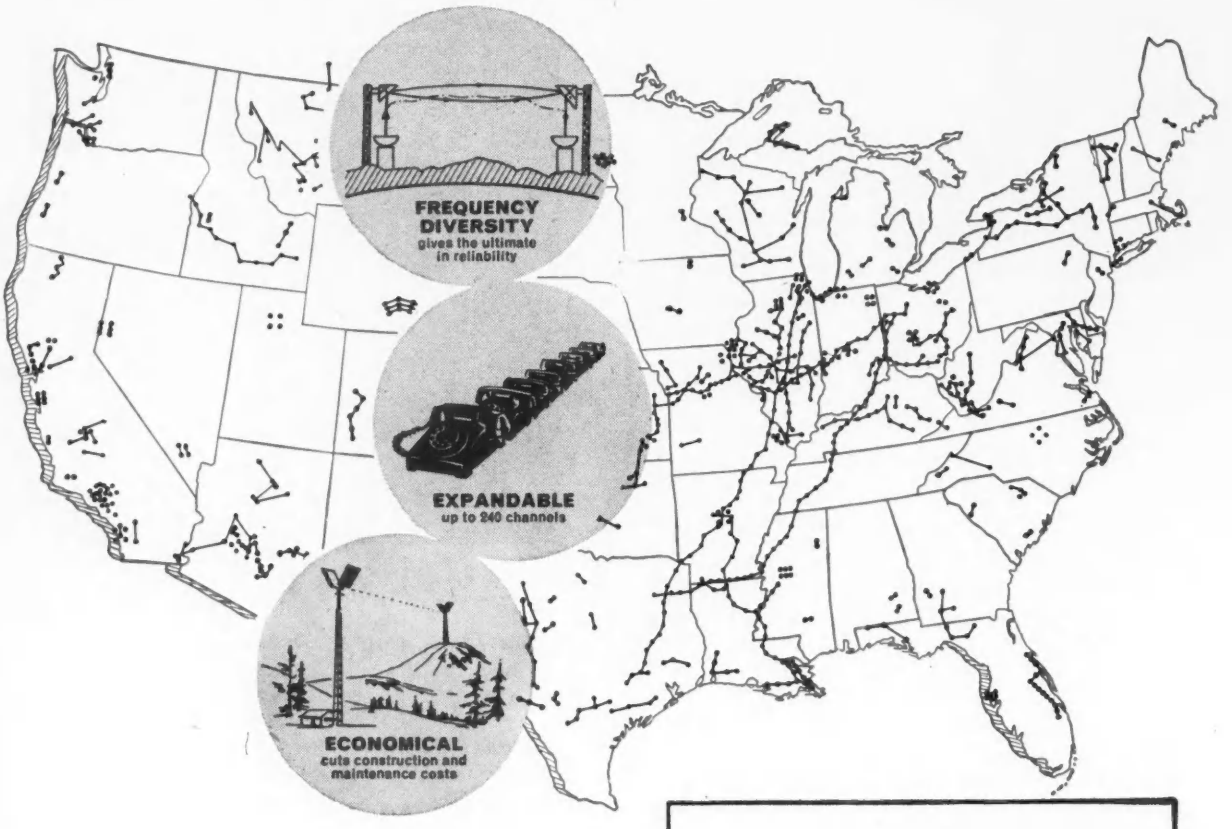

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J. P. BORDEN, Charlottesville, Va., received prize from Pioneers for getting most ITPA members. W. P. HOLLIS (right), USITA Director, congratulates him.

Members of the USITA Convention group are (l. to r.): — H. A. WHITE, Lincoln, Neb.; ROY SMITH, Chicago, Ill.; and WALTER DAKIN, Madison, Wisc.

Clouds Over Telephone Fair Return

By JOHN F. CHILDS*

Treating investors fairly is one of management's most difficult undertakings — but the telephone industry has some special features which add to the difficulty of the problem.

AMONG THE many responsibilities of the management of a utility company is the obligation to treat fairly three groups: *Consumers*, *Employes*, and *Investors*.

Treating investors fairly is one of management's most difficult undertakings and one of the most important. It is this problem which I will discuss. Most of my comments apply to the entire utility industry, but the telephone industry has some special features which add to the difficulty of the problem.

It is the ingenious use of capital that has made labor productive and accounted for our high standard of living. Without capital, we would be back in the horse and buggy days. Too many people have lost sight of this fact. Too many people are inclined to feel that capital, finance, Wall Street, etc., are to be looked upon with great suspicion. There is little excuse for such an attitude to persist, for today almost everyone helps supply capital either indirectly through pension plans, life insurance, savings banks, investment companies, etc. or directly through the growing ownership of common stock by the small investors.

And obviously, it will be equally beneficial to consumers and employes as well if investors are accorded the fair treatment. This is particularly important to the utility industry, because it is one of the largest users of capital. Few other industries require from $3 to $4 of capital per $1 of annual operating revenues.

Why is fair treatment for investors such a diffi-

* *Mr. Childs is vice president of the Irving Trust Co., New York City.*

cult task? For many reasons. Let me name a few of them.

(1) The prejudice of the consumers . . . As far as the consumers of utility services are concerned you are a monopoly. The characteristic of your industry requires that you operate as a monopoly; there is nothing wrong with it. However, this characteristic has a very unfavorable effect on your consumer reaction.

In America, with our independent nature, our freedom, etc. consumers don't like monopolies. For most other types of purchases, such as cars, washing machines, food, etc., the consumers can switch from one company to another if they become dissatisfied. But there is no way to vent their feelings if they don't like utility bills. These bills are like tax assessments. Moreover, consumers just don't know that they are more than well protected by regulatory commissions. Surveys have shown this to be a fact. Thus you have an inherent prejudice which tends to build consumer ill will. Furthermore, in the 1929 era, some segments of industry indulged in financial practices which no one can ever condone. That was a very serious blow to all of industry from a public relations angle. Unquestionably, such practices have long been eliminated and most of industry is largely "lily white" today. The 1929 mistakes, however, have not been entirely forgotten throughout the country and an element of suspicion still exists in some quarters.

Unfortunately, a sufficient number of the consumers don't realize that utility rates are actually cheap and are, in fact, among the few items which have not skyrocketed in price as a result of postwar inflation.

(2) The press . . . Consumer prejudice is aggravated by the fact that the press, through no direct fault of its own, often makes things more difficult. Utility rate increases are usually announced in the newspapers with blatant headlines in terms of millions of dollars. Actually the rate increases amount to only a few cents per month per consumer. But that fact is buried in the story. Yet, when there are increases in prices of all other types of goods, they are almost always reported in headlines as so many cents per pound or per ton, etc. The figures never sound very big. Actually, if multiplied by the pounds or tons etc., consumed, the end results would make rate increases by utility companies look small.

(3) Regulation . . . Regulation has a difficult job to do, very difficult. Commissions are usually understaffed and the pay is just not commensurate with the responsibility they carry. I have the highest regard for people in regulation. Most of them are attempting to do a sincere, honest and conscientious job.

However, there are some commissioners who either don't know or don't want to know, or yield to political pressure, and always decide everything in the immediate favor of the consumers. In fact, I can remember a utility commissioner telling me that it was his duty to protect the consumers, let the management worry about the investors. However, there isn't any possibility that the investors will be treated fairly under such circumstances. It is regulation that determines the earnings of utilities, and how can investors be treated fairly if regulation refuses to take seriously the investors' problem. Obviously, there isn't a chance under such unenlightened thinking.

JOHN F. CHILDS, vice president, Irving Trust Company, New York City.

This element is frequently magnified by the fact the regulators are either appointed by elected officials or are elected themselves. This adds the factor of political pressure, if politicians choose to take advantage of the consumers natural prejudice, and makes it difficult for regulation to function as a free judicial body.

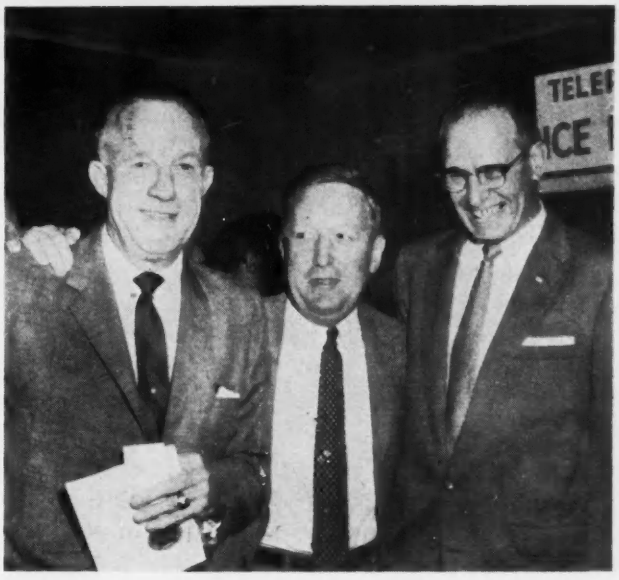
(4) Difficulty of proof . . . All of the obstacles mentioned above would not be so serious, if the matter of proving what a fair return should be was a cut and dried proposition understandable to everyone. This is not the situation. It is, in fact, a most difficult and involved problem for the following reasons:

(a) Proof of a fair return necessitates much testimony and statistics. Furthermore, it is impossible to find statistics in most cases which by themselves prove what a fair return should be.

(b) As with all problems of finance, judgment is essential in interpreting the statistics. But the use of judgment, and allowances based thereon, is looked upon with grave mistrust by those who are not familiar with finance.

Judgment must be applied in many places, such as determining a proper capital structure, dividend payout, underpricing allowance for common stock offerings, cost rate for common using expected or future earnings, and, above all, the need to allow something above cost-of-capital in order to get a fair rate of return. There are many reasons for this allowance which I will not go into here. *Please turn to page* 120

Left, RALPH LUCIER, Warsaw, Ind. greets A. J. ZIMMERMAN, Seattle, Wash. (center) and HUGH BARNHART, Rochester, Ind., during USITA convention.



Left, ARTHUR LAMBERT, San Francisco, Calif., (center) RAY DOLAR, New York, and BURT RUFFNER, Muskegon, Mich., meet at recent USITA convention.

A Vibrant Part of American Economy

By CLYDE S. BAILEY*

Barring unforeseen developments, good business is ahead for the telephone industry. To meet the demands of today and the future the industry will need large amounts of new capital and continuing attention to subscriber rate levels.

UNDERSCORING the current meaning of our 60th anniversary, the theme chosen for this convention is "Independent Telephony — A Vibrant Force in a Dynamic Economy."

From a mere fledgling in the late 90's the Independent industry has prospered and grown until today it has an aggregate plant investment of $2,323,052,000, more than 9 million telephones, 100 thousand employes, and more than 200 thousand stockholders. If the investment of Independent manufacturers and suppliers and their employes and stockholders were included, the respective figures would be even more impressive.

As a result of mergers and consolidations the number of Independent operating companies is descreasing, but telephones and subscribers and communities served are increasing. The number of companies today is about 4,400 compared with 9,200 in 1922 and 6,000 in 1940. Thus the merger trend is one that has been in progress for a number of years. It has its counterpart in the gas, electric, transportation and other industries where likewise the number of operating units has declined over the years and resulted in the building up of larger entities with greater human resources and financial capacity to carry on public service responsibilities.

Independent telephone companies today have aggregate annual operating revenues of more than $650 million. Although most of the companies are in the category of small business, more than 90 have annual revenues in excess of $1-million. The plant investment of most of our companies has doubled since the end of the war. In the case of many it has quadrupled.

* *Mr. Bailey is Executive Vice President, U. S. Independent Telephone Association, Washington 4, D. C.*

It has been estimated that upwards of 40 million babies have been born to American families since the end of the war. In the next 10 years there will be another 40 million or more. This expansion in population is significant to the telephone industry along with other American business. It means more homes and countless conveniences required by an American standard of living. More homes mean more telephones. The American people are more telephone conscious than those anywhere else in the world. In the United States there is one telephone for every 3.1 persons, compared with an average of one for every 61 persons in the rest of the world.

Some projections recently made and commented upon in a member letter from your Washington office estimated that Independent companies may be serving about 12 million telephones by the end of 1960 and have in operation some 26 million by 1975. It is predicted that there will not only be more homes with phones but that many homes, under effective merchandising programs, will have second, third and fourth phones as added conveniences. Our major opportunities lie ahead of us, not behind us.

Conversion to dial telephone service is going forward rapidly. Our manufacturers are busy turning out the necessary equipment as fast as they can. Already about 70 percent of all Independent telephones are dial, compared with 90 percent in the Bell System. At the present rate of progress it is estimated that all Independent exchanges can be converted to dial within ten years.

All of these circumstances point clearly to the prospect that barring unforeseen developments, good business is ahead for the telephone industry. They also point to the need for large amounts of new capital, to constantly expanding employment opportunities, and to the need for continuing attention by management and regulatory authorities to subscriber rate levels so that through adequate earnings investors may be attracted to our field and expansion and improvement may proceed in an orderly way.

Legislation

WHILE activity in legislative matters is not the principal function of your Association, it is natural and proper when measures are pending before Congress in which the Independent segment of the telephone industry is interested, that your organization should seek an opportunity to express its views.

Legislation of interest to Independent companies, considered at the last session, may be listed under the following headings:

(a) Bill to extend the coverage of the Wage-Hour law.

(b) Bills to increase the minimum wage.

(c) Bills to increase the securities exemption.

(d) Bills to repeal the reimbursement provisions of the 1956 Federal Aid Highway Act.

(e) Bills to repeal excise taxes on telephone service.

(f) Bill dealing with administrative and technical provisions of the Tax Code.

CLYDE S. BAILEY, USITA executive vice president joined USITA as Washington representative on November 1, 1940, following three years with the Interstate Commerce Commission and 20 years with the National Association of Railroad Utilities Commissioners. Reelected to office during the 1957 USITA Convention, Mr. Bailey starts his 18th year of service to the Independent telephone industry with a wide acquaintance and close relationship with members of the telephone industry and an accomplishment record that makes him a great asset to USITA.

(g) Bills to boost the R-E-A interest rate.

(h) Bill to regulate over-the-counter security transactions.

(A) Bills to Extend Coverage of the Wage-Hour Law: — The most important piece of pending legislation, to the smaller Independent exchanges, was probably that involving the switchboard operator exemption under the Wage-Hour Act. Two bills were introduced at the last session dealing exclusively with this exemption, one by Senator Morse (D.-Ore.) and the other by Congressman Miller (D.-Calif.). A number of other bills were introduced to repeal various exemptions including ours.

Only limited hearings on bills in the Senate were held by the Kennedy Subcommittee of the Committee on Education and Labor because of the fact that a substantial volume of testimony was already in the record from hearings held last year when the subcommittee was headed by Senator Douglas of Illinois. Notwithstanding the fact that our Association had presented testimony in 1956 we sought and obtained permission to testify again this year. Chairman Clyde McFarlin of our Employment Relations Committee, our witness, did an excellent job of portraying economic conditions surrounding the operations of the small telephone exchange. Drawing attention to the rate at which conversions to dial are going forward, he told the subcommittee that the small exchanges needed some additional leeway to

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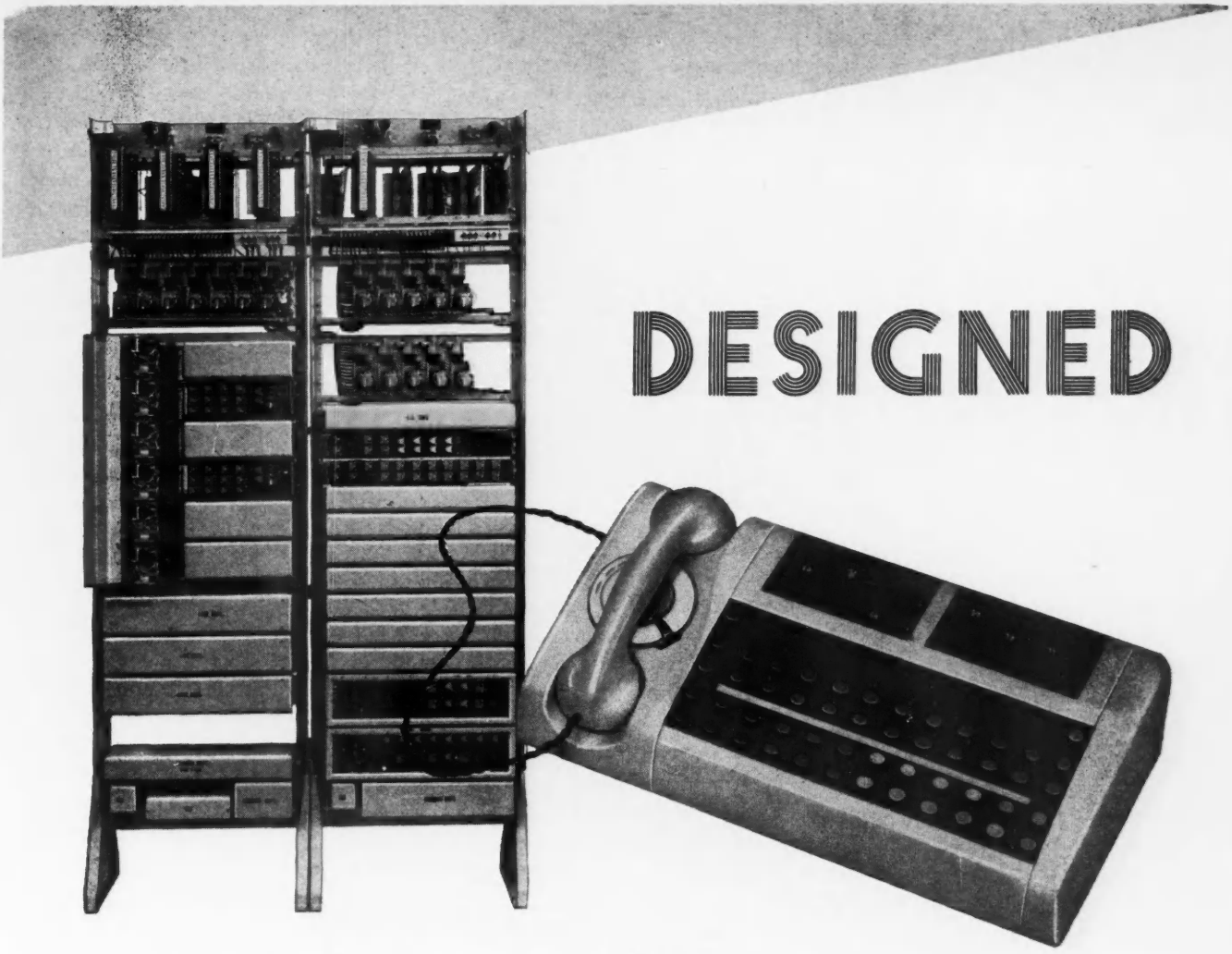

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work out their problem and that, given time, the exemption problem would disappear.

Mr. McFarlin also presented similar testimony at resumed hearings before the Kelley Subcommittee of the House Committee on Education and Labor. These hearings were still in progress when Congress adjourned; indeed regional hearings in certain Rocky Mountain and Pacific Coast states have been scheduled to begin October 31 and continue through November 19.

At both Senate and House hearings Secretary of Labor Mitchell advocated a new approach to the general exemption question for all affected industries. He recommended that the law be rewritten to apply to all employes who are employed "in the activities of any enterprise doing business in interstate commerce to a substantial extent" and whose employer's business operations require interstate deliveries of materials or supplies amounting to $1 million or more. How many of our small exchanges presently enjoying the switchboard operator exemption would be adversely affected by the Secretary's proposal is not known. There was no definition of the term "substantial extent." No bill embodying the Secretary's recommendations has been introduced.

After the Senate hearings ended Senator Kennedy introduced S. 1853, a bill proposing a pretty complete revision of the Wage-Hour Act and contemplating the repeal or modification of many exemptions. It would revise our exemption in such a way as to make it apply only to "any switchboard operator who is providing telephone service through a telephone switchboard located in such operator's home."

The Kennedy bill was reported without recommendation by the Subcommittee to the full Senate Committee where it was resting when Congress adjourned. For reasons set forth at some length in a communication to the Committee, we stated that the Kennedy proposal was unacceptable to us. We stated that it would be an unjustified dilution of the exemption as it now stands and that so far as many exchanges are concerned would remove the exemption.

Because 1958 will be an election year with all seats in the House and one-third of all seats in the Senate up for contest, some expansion of coverage of the law seems almost inevitable at the next session. According to the Department of Labor there are 43 thousand switchboard operators in the exempt class. There are 6½ million employes in all industries who are exempt, with agriculture having almost half of this number and retail service establishments running next with 1.3 million.

(B) Bills to Increase the Minimum Wage: — The last session of Congress also witnessed the introduction of a large number of bills to increase the minimum wage, most of them proposing $1.25 but several calling for $1.50. Neither Senate nor House Committees held hearings on these measures. They confined their hearings to the subject of need for expansion of coverage. The present $1 minimum was enacted in 1955.

Although President Eisenhower in his State of the Union messages in 1956 and 1957 earnestly recommended expansion of coverage, he has not come out for an increase in the minimum wage. The labor unions which have been sponsoring amendments to the Fair Labor Standards Act will be certain, especially in an election year, to advance the argument that continued inflationary conditions with increased living costs demand not only expanded coverage but an increase in the minimum as well.

Representatives of telephone companies and all other affected businesses would be well advised while Congress is in adjournment to see the members of their congressional delegations and acquaint them with facts concerning the impact upon their operations which amendment of the law would produce.

(C) Bills to Increase the Securities Exemption: — I am glad to be able to report that the Senate passed a bill last summer to increase to $500,000 (from $300,000) the amount of securities that may be issued in any year without observing the expensive, time-consuming registration requirements of the Securities and Exchange Commission. Bipartisan support had been given this matter by the introduction of identical bills by Senators Thye (R.-Minn.) and Sparkman (D.-Ala.). President Eisenhower in his budget message in January had recommended the increase. At hearings before a Subcommittee of the Senate Banking and Currency Committee our Association along with other interested groups presented testimony in support.

The bill is now pending before the House Committee on Interstate and Foreign Commerce, with a fate that may be uncertain. We urged Chairman Harris (D.-Ark.) to give the bill a favorable report based on evidence taken at the Senate hearings, or at all events to hold hearings before adjournment of Congress. But no action was taken.

It will be recalled that a similar bill was passed by the Senate in 1954. When it was on debate on the House floor it was defeated by forces led by Congressman Bennett (R.-Mich.) and by Speaker Rayburn, the author of the Securities Act. Association members interested in this legislation should before next January make it a point to acquaint their congressional representatives with their views.

(D) Bill to Repeal Highway Reimbursement Provisions: — If Congressman Robert E. Jones of Alabama had his way the utility highway relocation cost reimbursement provisions of the 1956 Federal Aid Highway Act would be repealed. Mr. Jones has been one of the most ardent opponents of these provisions from the start.

In April of the current year he introduced a bill, H.R. 6987, virtually calling for their repeal. This measure would provide that no part of federal funds shall be used for the cost of relocation unless it is p art of the cost of acquiring lands or interests in lands for right-of-way for the highway project. The bill would also provide that no utility shall be permitted within the right-of-way for any project except where the utility actually

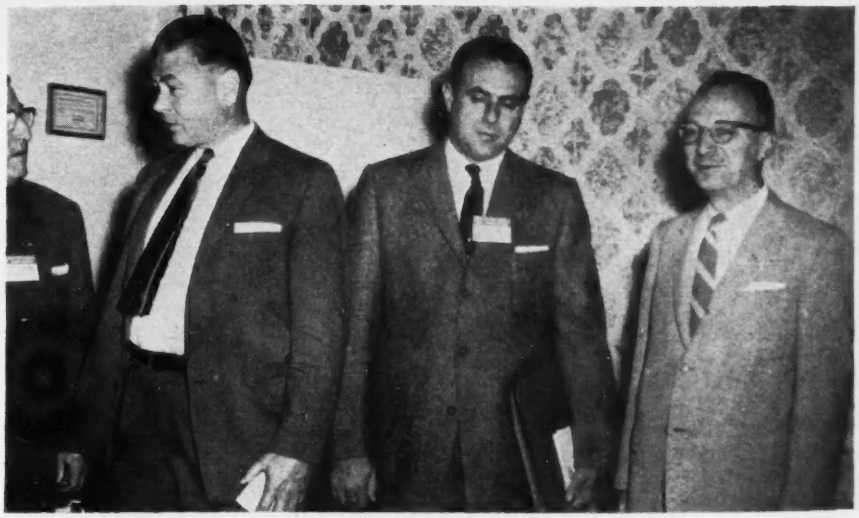
crosses highway rights-of-way. He also introduced another bill, H. R. 6988, to prohibit the use of federal funds in any State highway trust fund for utility reimbursement except for the purposes just described.

In an extension of remarks in the Congressional Record, Congressman Jones bitterly criticized utilities, using such expressions as: "Congress did not intend to open the door to a raid on the Federal Treasury to pay funds to the states for utility relocation costs . . . It is quite clear that the utilities stand to receive an unprecedented windfall." It is evident that the arguments successfully advanced and accepted by other members of Congress in 1956, in support of reimbursement provisions, were entirely lost on Mr. Jones.

The bills were referred to the House Committee on Public Works but were not given the dignity of a hearing. It is probable that their author did not expect them to get far in Congress but introduced them to embarrass efforts at the local level to obtain state legislation needed to implement the federal provisions.

The status of state implementing legislation is the subject of a report available at this convention written by our Committee on Highway Relocation Costs.

(E) Bills to Repeal Telephone Excise Taxes: — Last November and December hearings on excise taxes including those on telephone service were held before a Subcommittee of the House Ways and Means Committee. Many interests were represented. In support of repeal of the excise taxes on telephone service President Wm. C. Henry of the Northern Ohio Telephone Company as the witness for our Association made a forceful, well-reasoned statement which received the close attention of the subcommittee members. President Erskine N. White of the New England Telephone and Telegraph Company also presented an excellent statement and likewise had good attention. The only other witness advocating repeal of the telephone taxes was a representative of the United Fresh Fruit and Vegetable Association.



USITA convention group (l. to r.): FOSTER B. McHENRY, Jefferson City, Mo.; W. C. HENRY, Bellevue, Ohio; EARLE G. BELLAMY, Knoxville, Iowa; and GEORGE C. RICHERT, Washington, D. C.

No report has yet come out of the House Committee, notwithstanding the fact that repeal of the discriminatory taxes on an item as essential as telephone service is long overdue. They were imposed as a wartime measure and the war has been over for twelve years. It seems to me that the industry would be well advised to continue to press for repeal or at least the enactment of a termination date so that these levies may not become a permanent part of the tax structure.

(F) Excise Tax Administrative and Technical Revision Bill: — Hearings were also held late last fall on a voluminous bill sponsored by the Treasury Department embodying a large number of administrative and technical changes in the Tax Code. The bill, supported by our Association, passed the House in June of the current year but no action has yet been taken in the Senate. The bill contemplates a number of changes in communication excise tax regulations, including some in the definition of types of service.

The principal changes in definitions are as follows: (a) Redesignating 'local telephone service' as 'general telephone service'; (b) redesignating 'long-distance telephone service' as 'toll telephone service'; and (c) redesignating 'leased wire, teletypewriter or talking circuit special service' as 'teletypewriter exchange service' and 'wire mileage service.'

(G) R-E-A Interest Rates: — Among other legislation introduced but not acted upon at the last session of Congress was S. 2427 by Senator Capehart (R.-Ind.) and H. R. 4781 by Congressman Hiestand (R-Calif.) to increase the interest rates on R-E-A electric and telephone as well as other government loans in order to accord with the cost of money to the government. President Eisenhower in his budget message to Congress in January urged reexamination of these interest rates. The 2 per cent rate on R-E-A loans has been in effect since this government agency came into being in 1936. When introducing his bill last summer Senator Capehart said that the interest rate paid by the government on its borrowings at that time amounted to 3⅝ per cent. Current borrowings go as high as 4 per cent.

From October 28, 1949 when the R-E-A was given telephone lending power until August 1, 1957 it has lent at 2 per cent interest a total of $233,750,179, divided between commercial telephone companies and cooperatives as follows:

Number of Borrowers	
Commercial	Cooperatives
348	204
Amount Borrowed	
Commercial	Cooperatives
$109,144,240	$124,605,939

(H) Bill to Regulate Over-the-Counter Security Transactions:

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"Interurbia"

The Changing Face of America

APPEARING at the first general session of the USITA convention on October 14, four officials of the J. Walter Thompson Co., President Norman H. Strouse, and Vice Presidents Francis E. Sammons, Jr., William C. McKeehan, and John M. Willem, presented a report which depicted by words and pictures the trends of increasing population in the United States and the growing together of American cities and communities.

Referring to "Interurbia" as "a term coined to represent an agglomeration of cities surrounding densely populated non-farm counties" the J. Walter Thompson Co., report pointed out that a continuous 600-mile urban strip, extending from Boston to Washington, is recognized as the first of 14 similar inter-urban developments now rapidly growing throughout the country.

To qualify for the Interurbia designation, an area must contain two or more metropolitan areas with two cities of 100,000 or one city of 100,000 and three cities of 25,000; plus adjacent counties with less than 25 per cent farm population and more than 100 people per square mile.

Thus, areas which at the last census did not quite fit the "Interurbia" designation are now interurbias in the making, the study showed. One is along the Florida Coast and across the middle of the Peninsula. North of Miami the coastal strip is already filled in for many miles, and development is now stretching south from Tampa and beginning to touch the Fort Myers area. From 1940 to 1955 the cities in this emerging Interurbia nearly doubled in population — while their suburbs increased more than two and a half times.

Interurbia today accounts for almost half the country's population and for more than half of retail sales, in less than 4 per cent of the nation's land area, according to the Thompson study, which predicted that by 1975 Interurbia will spread to include 60 percent of the population and 70 per cent of all retail sales.

The report emphasized the speed with which the Interurbia development is taking place, pointing out how economists have failed to anticipate growth of population purchasing, home construction, and changes in shopping and living habits.

The northeast Atlantic strip is said to be the largest demonstration of the evolution.

"It is virtually one 600-mile city," the report emphasized, "from Maine to Virginia," with only two stretches, one of two miles and one of 17 miles, which are not part of metropolitan areas. This 600-mile city comprises less than 2 per cent of the nation's land area, 21 per cent of its population, and 24 per cent of its retail sales.

Other Interurbian developments described by the report included: The steel belt from the mines to the lakes, from Pittsburgh to Cleveland; the Detroit group extending from Lansing to Toledo; Lake Michigan's industrial riviera connecting Milwaukee, Chicago and Gary; the developing Interurbia along Puget Sound. Another is the striking inland from San Francisco, while Los Angeles is reaching toward San Diego. Texas, Dallas and Fort Worth may extend southwesterly to San Antonio. The St. Louis area may reach toward the Chicago strip.

In explanation for the merger of cities, the Thompson report pointed out that both homes and jobs, once fixed, have become comparatively moveable. Within Interurbia, labor forces do not move in steady one-way streams, but more in a series of cross

currents. Factories have moved out into the country to find space needed for expansion into efficient one-story plants.

The report scoffed at the possibility that the growth of Interurbia might cause a shortage of farmland, pointing out that only 20 per cent of the nation's land area is used for crops, another 30 per cent for pasture.

Many social, economic, and marketing changes are expected to appear in the wake of this physical transformation. More "fragmentation" in living conditions is predicted with different communities catering to different age and income groups. Highlighting the separation of families, the report cited the fact that tolls on the George Washington Bridge reach their peak — not on Memorial Day, Fourth of July or Labor Day — But on Mother's Day. The increasing mobility of families produces a strong "upgrading" urge, the report stated, with people striving for better homes and more conveniences with every move.

The study referred briefly to a collateral psychological investigation, reaching several thousand people living inside and out of Interurbian areas.

A number of significant differences were brought out:

(1) *The Interurbian man is above the national average in desire for achievement — desires to rival and surpass others — to achieve prestige and acclaim.*

(2) *He needs to dominate other people — wants to be a leader and influence others.*

(3) *He is more willing to talk about sex and less strict in attitudes.*

(4) *He likes to be the center of attention — to have others notice him — to make an impression on others. Vanity and self-dramatization are stronger in him than in the non-Interurbian.*

(5) *He doesn't mind change — likes to do new and different things — likes to change his daily routines — likes variety and novelty.*

(6) *He is more aggressive than the national average.*

(7) *Mrs. Interurbia exhibits similar tendencies. She is an expert in understanding others, examining motives, analyzing behavior.*

JACK DENNEY, Amherst, Va., (left) and ALLEN C. BROWN, Rhinelander, Wisc., in front of Telephone Advertising Institute exhibit at USITA convention.

According to the Thompson Company report, "Interurbia will push us toward an economy that will be bigger and more stable . . . It changes city dwellers with no possessions to people of property with a hunger for hard goods that drives them to work not just for a comfortable livelihood, but for the extras."

The report points to the stabilizing effect of the vast expenditures required by business, utilities, and public authorities. The present highway construction program alone calls for the destruction of about 90,000 houses a year, accelerating housing needs in a brutally direct fashion. Increased mobility of workers is said to be another stabilizing factor, since it makes them less dependent on any one job. Relief from a growing shortage of manpower is seen in the employment of larger numbers of part-time, over-age, and physically handicapped persons.

To meet the competition for desirable employes, employers are expected to take more initiative in developing benefit programs, and to exploit all possible techniques for welding their organizations together. Other changes are foreseen in retailing, test marketing, and product research. Executives in charge of areas now designated as New England, Middle Atlantic states, and so forth, may be reassigned to supervise a particular Interurban strip.

The study cautioned marketers against exclusive preoccupation with Interurbia. It did suggest that these areas are the pace-setters for the nation, where most of the dollars will be made, and where habits formed will continue to influence the nation.

Regarding media of communication, the study predicted continued usefulness of all major outlets.

"Interurbian man will continue," said the report, "to have two major appetites for news — one, national and international; the other, regional and local. The metropolitan daily may seek to satisfy both with zoned editions, or it may sign over local news to the smaller daily and weekly. Radio is expected to be forced into simpler, more economical programming, making it more the vehicle for music and news. More efficient television networks are also anticipated. . . ."

The Thompson report concluded with a speculation about the speed with which the process of Interurbanization will take place and expressed certainty that fundamental changes will ensue. "No one will find Paradise In Interurbia," it said, "Paradise will always be just around the corner, and that will be our greatest opportunity."—*Adapted from a report presented at the* 1957 *convention of the U. S. Independent Telephone Association.*

HERMAN P. SIEBKEN, chairman USITA Plant Committee, presided at recent Plant Conference.

Plant Conference Speaker P. K. FUGATE, Springfield, Ill., discussed "Causes and Cures of Induced Noise."

R. K. GHORMLEY, Lincoln, Neb., discussed "The Who, What & When of Telephone Equipment Maintenance."

USITA Plant Conference Report

By JOHN S. REED*

USITA Plant Conference speakers discussed: (1) Causes and Cures of Induced Noises; (2) Line Routining and Equipment Maintenance; (3) Maintenance of Rural Distribution Wire; and (4) Miss "Telephone Service." Plant Committee reported on 1957 activities.

HERMAN P. SIEBKEN, USITA Plant Committee Chairman presided at the USITA Plant Conference on Tuesday, October 15. The meeting, held in the Astoria Room of the Conrad Hilton Hotel, Chicago attracted several hundred USITA conventioners who heard Conference speakers P. K. Fugate, Springfield, Ill., R. K. Ghormley, Lincoln, Neb., Otto Kinsel, Bellevue, Ohio; and J. R. Yeager, Lima, Ohio, emphasize proper maintenance procedures and describe causes and cures of induced noises.

Following a brief message from USITA President Donald C. Power, Committee Chairman Siebken presented the plant Committee Report describing the formation of the USITA Engineering Committee and other Plant Committee activities.

"In May, 1957," Mr. Siebken said, "a joint meeting of the Engineering and Plant Committees was held at Chicago in order to organize, divide the responsibilities, and set up working sub-committees. After a day of joint meeting, each committee met to program its future activities."

According to Mr. Siebken, it was recommended by the Plant Committee, which will be responsible for all construction and operations, that four subcommittees be created, each with one of the four members of the committee as a director. The recommendations were that in the future the following four subcommittees be created: (1) Outside plant construction; (2) outside plant maintenance including station instal-

**Mr. Reed, technical editor of TE&M, is with the Lincoln (Neb.) Tel. & Tel. Co.*

lations; (3) installation and maintenance of central office and PBX equipment; and, (4) safety and plant training.

"It was the consensus of opinion," he said, "that three to five men chosen from the industry be appointed to each subcommittee to assist the members of the Plant Committee."

Mr. Siebken reported that during the year committee members have attended various meetings to represent the industry. In April, 1957, a member represented the USITA Plant Committee at a meeting held in the American Telephone & Telegraph Co., offices in New York for a discussion of "Maintenance and Service Problems in Connection with Private Line Services."

This is handled by a committee under the Chairmanship of K. L. Lawson of Lincoln, Neb. Later in April 1957, the committee was represented at a meeting held at the REA offices in Washington, D. C. This was a meeting with the industry's manufacturers covering the revision of specifications on covered wire and plastic cable, as well as specifications on color codes.

"The committee has been kept up to date on civil defense," Mr. Siebken said. "The original meeting was attended by W. M. Driggs for the Plant Committee, and since that time we have been kept up to date through the USITA office and the American Telephone & Telegraph Co., on all matters pertaining to civil defense and the SAGE System. During September of this year the committee will also be represented at a meeting called by the A.T.&T. Co., at New York on 'Data Film Service' and a report will be submitted later."

In concluding the Plant Committee report, Mr. Siebken stated members of the committee have been called upon by various Independent telephone companies for advice or suggestions "which we hope have been sufficient and satisfactory."

"At any time any or all members of the Plant Committee are ready to assist on any problems which may be called to their attention," he said. "It is felt that with the membership of the committee and subcommittees.

CLYDE S. BAILEY, USITA executive vice president (left) discusses USITA convention with W. P. HOLLIS, Chicago, (center) and RAY DALTON, Everett, Wash.

USITA Convention guests (l. to r.): — GEORGE L. BEST, A. T. & T. vice president, F. R. KAPPEL, president A. T. & T.; and WM. KAHLER, president, Illinois Bell Telephone Co.

Members of the USITA Convention group are (l. to r.): — DONALD C. SORENSEN, Chicago, DON ELLIOTT, Grove City, Pa.; JOHN REED, Lincoln, Neb.; and ROBERT WISEMAN, Galion, Ohio.

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Causes and Cures Of Induced Noises

PAYTON K. FUGATE of the General Telephone Co. of Illinois, Springfield, brought the USITA Plant Conference an interesting report on common causes of induced noise on telephone circuits and outlined measures for eliminating or minimizing these conditions.

Defining induced noise as "any extraneous energy on a telephone circuit which interferes with the transmission or reception of the desired intelligence," Mr. Fugate stated that this definition includes crosstalk, central office noise originating in the rectifiers, ringing machines, supervisory tones, switch gear and other equipment, together with circuit noise resulting from thermal conditions, static, or inductive exposure to power lines.

"You do not need a transmission engineer equipped with several thousand dollars worth of testing equipment to tell you that a noise condition exists in your plant since you, your operators, and unfortunately your subscribers, are fully aware of it after attempting to carry on a conversation over the lines involved," he said. "In some cases the services of a transmission engineer or technician may be required to find a cure for the condition; but in most situations basic knowledge of the more common causes and remedies together with the application of ordinary 'horse sense' will produce a solution."

Pointing out that since crosstalk resulting from conditions in the outside plant, and inductive interference from exposure to power lines are very closely related, Mr. Fugate stated that in both cases the "unwanted transfer of energy results from the close relationship between the circuits involved whether power or telephone, conditions on the disturbed circuit which make it receptive to the unwanted energy in the form of noise or crosstalk."

After describing some of the most common contributors to inductive

Plant Conference Speaker O. F. KINSEL, Northern Ohio Tel. Co., Bellevue.

interference, Mr. Fugate discussed simple test measures for locating the cause of a given condition of this type.

"For the simplest type of situation," he said, "we can assume that we have a noisy rural line composed of several miles of open wire reaching the central office through a length of exchange cable. As is usually the case the open wire section of this line is paralleled through most of its length by a power line located on the opposite side of the road."

According to Mr. Fugate the first procedure should be to test the line for insulation leakage using the battery and voltmeter method. If either poor insulation or a low resistance ground on one side of the line is found all protector blocks should be checked and cleaned, and the line should be patrolled for tree conditions.

If considerable vibration of the DC voltmeter needle is observed it would then be well to use an AC voltmeter to determine the possibility that a power service wire may have sagged into the telephone line. In the event that the insulation is good and no power fault to the telephone line exists, it is well to inquire into the past history of the line to determine whether this condition is of long standing or has occurred only recently. If the line employs bridged ringing and all ringers are equipped with series condensers the test can be very readily made using a Wheatstone bridge connected for a Varley test at one end of the line and placing a short and ground at the opposite end.

Procedure for such a test is included in the instruction book ordinarily furnished with each Wheatstone bridge when it is purchased. This test may be supplemented by a loop resistance test, the results of which can be compared with calculated loop resistance values for the circuit involved. The results of these two tests will determine whether or not a search for high resistance joints in the wire should be made.

If the overall tests indicate a possibility of high resistance joints, sectional tests can be made with the Wheatstone bridge as a Varley loop testing device, following which any suspected sleeves or joints in the wire can be tested with an ohmmeter or by other means which have been covered in detail by previous papers presented at USITA meetings or published in the telephone magazines.

"One very simple method of locating high resistance joints or connections on noisy lines involves the use of only a test receiver," Mr. Fugate reported. "This receiver can be bridged around a suspected sleeve or joint using test leads or a clip device at the end of a pole. If no noise is heard in the receiver the sleeve or connection has low resistance and probably is satisfactory. When high resistances are encountered noise will be heard in the receiver, the loudness depending on the resistance. This method is not satisfactory when a number of joints are involved with each one having only a few ohms resistance. . . ."

Mr. Fugate stated that a problem has recently arisen with the use of plastic sheath plastic insulated cable.

"In this type of cable," he said, "the shield, which is usually composed of a spiral wrapping of rather thin metal, either aluminum or copper, has substantially higher resistance than the larger cross section lead shath formerly used. As a result the resistance of the shield itself causes a decrease in the effectiveness of the

shielding on the pairs in the cable as the distance from the nearest grounding point increases. This is especially noticeable in cases where long runs of the plastic cable are originally grounded only at the central office."

He reported that in one such instance a plastic sheath cable approximately five miles in length was excessively noisy on all cable pairs until grounds were placed at the end terminal and at a small number of locations between that point and the central office. In this type of construction the normal grounding of the messenger through uninsulated down guys is not transferred to the shield because of the insulation afforded by the plastic sheath.

"In placing this type of cable," Mr. Fugate said, "it has been found desirable to bond the shield to the ground posts in each terminal and in turn to bond these posts to the messenger. In most cases a good ground will also be required at the end terminal and it may be found necessary to provide other intermediate grounding points to secure satisfactory noise reduction."

In closing he stated that a small percentage of the cases involving induced noise and crosstalk do require analysis by trained personnel using rather expensive instruments, but the application of simple testing procedures together with a small amount of knowledge concerning the basic causes of induced noise and crosstalk will produce satisfactory solutions to a large majority of inductive coordination problems.

"Every possible effort should be made to see that our telephone plant is in satisfactory condition before a coordination problem is taken up with either the power company or a specialist in such matters," he said. "This applies to the entire telephone operating industry whether it be a small company operating in only one exchange or a large telephone company . . ."

Equipment Maintenance

DISCUSSING "The Who, What, and When of Telephone Equipment Maintenance," R. K. Ghormley,

Texas Independents get together for special breakfast date during the recent USITA Convention. Group photos shown above were taken by TE&M camera.

Members of the USITA convention group are (l. to r.) KELLEY McNISH, Bristol, Tenn.; MERLE M. HALE, Lincoln, Neb.; HUGH A. BARNHART, Rochester, Ind.

general equipment engineer, Lincoln (Neb.) Telephone & Telegraph Co., referred to the "Who" of equipment maintenance as "Anyone charged with the responsibility of operating telephone equipment."

"This is true," he said, "if you are a one-town company. It is true if you are a multi-state company, and I believe it is true if you fit some place between those extremes. The problems are different and the procedures will vary, but whether you are small or large, routine equipment maintenance is one of your concerns. And whether you are the vice president and manager, or are the switchman, efficient maintenance is cause for thought."

Referring to the "What" of equipment maintenance, Mr. Ghormley stated, "our main objective in equipment maintenance is to keep it in proper working order with an optimum balance between maintenance costs and service impairment."

Describing the "When" of maintenance as the "how often" aspect, Mr. Ghormley emphasized there are two extremes on almost any type of routining — and "neither is always correct."

"There is the routine that is done so frequently that the equipment is literally worn out from the routines — not from the service that it renders," he said, "and the other extreme of routining is that scheme which 'doesn't'."

Referring to the concept of minimum of routine, Mr. Ghormley commented that the danger in going too far on a 'minimum' routine program is that "pretty soon we reach a point where service starts to become impaired."

"It is my conviction," he said, "that some of us may have a ways to go before we reach the ultimate in efficient maintenance. It may take some experimenting. Just because you have established a routine schedule that keeps your equipment working to your satisfaction does not necessarily mean it is the most efficient schedule. If your schedule is on the heavy side, how do you know until you have tried it that you couldn't get along on half as much. Maybe your routining is on the minimum side.

"Unless you have tried it, how do you know but what a stepped up maintenance program would reduce your service complaints enough to be worth the extra cost? It seems to me that in either case it is worth a little deviation from what we've been doing — just to convince ourselves we are right or to discover we've been wrong all this time!"

Maintenance of Rural Distribution Wire

THE assistant plant superintendent of the Northern Ohio Telephone Co., Bellevue, Ohio, O. F. Kinsel, reported to the Plant Conference that many companies are using Rural Distribution Wire in various sizes to quickly supply service to applicants for telephone service in new housing developments and rural areas.

"It is also used under emergency conditions where restoration of telephone service is essential," he said. "It is going to be used more and more by the smaller companies because it does not require the skilled men as does lead cable or plastic jacketed cable in the splicing and repair. With the increased use of Rural Distribution Wire, an immediate need for proper maintenance and repair has developed.

Mr. Kinsel stated that one of the first steps in maintenance "is the best possible installation of this wire."

Extreme care must be exercised in the handling of the wire during its initial placement so that the insulation is not damaged," he emphasized. "The wire must not be dragged on the ground or pulled over objects that could in any way injure the wire, but should be placed on rollers when installing and tensioning for sag. If the insulation on the support wire is damaged, it should be restored so that the wire will not rust. Vehicular traffic should never be allowed to travel over the wire. The junction of the wire with open wire or cable should be protected with approved line arrestors which should be properly grounded."

Mr. Kinsel stated that probably the most frequent cases of trouble will be mechanical injuries resulting from falling limbs, damage by gunshot, objects thrown at the wire, lightning, power burns, and a likely possibility of damage from having power lines pulled over the wire.

"It appears," he said, "that this wire, due to the way that it is constructed, will be subject to the same types of problems that arise with the use of lead and plastic cable. It is our opinion that the wire, relative to maintenance, falls into the same category as cable. When faults occur, such as shorts, crosses, and grounds, they should be located by the use of a cable tone and an exploring coil the same as in sheathed cable. Repairs after they have been located, may only require the restoration of the insulation. In some cases, however, a new piece of wire may have to be spliced in. Compression type sleeves are available for this job and should be used. The splice should then, of course, be covered with the approved type of tape for this wire. Friction tape should not be used."

Referring to opens, Mr. Kinsel stated they can be located by the use of an amplifier and buzzer tone, together with a test probe attached to a pole.

"We are emphasizing the use of these tones to encourage their use in place of using a test pick or knife blade to cut into the wire to make tests for opens or to open the pair in trouble in order to determine in which direction the fault may be," he said.

Discussing maintenance, Mr. Kinsel pointed out that rural distribution wire "cannot be ridden in a cable car because that would surely injure the insulation."

"To place a ladder against the wire," he said, "could also result in injury unless the ladder had a third leg and its sides had cloth or sponge rubber at the point of contact with the wire. Aerial truck ladders are the safest and most convenient means for making repairs where the cable cannot be lowered or where repairs cannot be made from the pole. . . . To prevent damage to the insulation by prolonged abrasion, especially by trees, a regular program of tree clearance and inspection should be carried out. At places where abrasion cannot be

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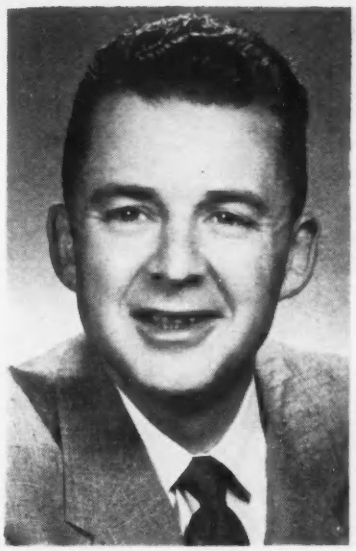
USITA Engineering Committee Chairman, PAUL H. HENSON, Lincoln, Neb., presided at the USITA Engineering Conference.

"Prospectus — The Engineering Committee" was discussed by FRED E. NORRIS of General Tel. Corp., New York City.



Engineering Conference Speaker L. GRAY BECK, Everett, Wash., discussed "Toll Ticketing Guideposts."

Engineers Emphasize Education

By RICHARD A. REYNOLDS

USITA Engineering Conference Speakers urge industry engineers "to be alert to new and better methods of doing things and to adopt new modern apparatus to the plant — whether the motive be to enlarge the scope of service, or to make it more reliable or more economical."

FOLLOWING the general theme of of USITA's 60th annual convention — "Independent Telephone — A Vital Voice In An Expanding Economy" — the USITA Engineering Committee on October 14 observed its 1st anniversary as a USITA Committee.

Meeting in the Astoria Room of the Conrad Hilton Hotel, Chicago, on October 14 with Engineering Committee Chairman Paul H. Henson, presiding, the committee presented a program featuring addresses by, Fred E. Norris, General Telephone Corp., New York City; L. Gray Beck, West Coast Telephone Co., Everett, Wash.; Elmer H. Danner, General Telephone Co., of the Southwest, San Angelo, Texas; Herman R. McDonald, Halls Telephone Co., Knoxville, Tenn.; and Dr. J. D. Ryder, Dean, College of Engineering, Michigan State University, Lansing.

"Prospectus"

GENERAL Telephone System's Vice President — Planning & Development, Fred E. Norris, told the Engineering Conference the Engineering Committee's aims might fall into two broad categories.

"The first of these," he said, "is to find ways and means of doing our every day job better. For this to be of purpose, the committee must make appropriate studies and analyses and also, must report its findings to the membership. The second category, a more glamorous one, perhaps, pertains to new inventions, new ideas, new materials and new apparatus of all kinds. If the committee is to lead instead of follow, it must be alert to the possibilities new innovations offer for improved service and for more economical operation. And, as before, make known what it has learned from its investigations. . . ."

Referring to the industry's growth, Mr. Norris reported that in terms of

plant investment "we added 2.1 times as many dollars to our accounts during the last 10 years as we did during our entire previous history."

"As impressive as this might be," he said, "it is considerably shaded by the rate we have grown, investment-wise, during the last *two* years. Last year, for example, we grew by $280,000,000. This is 1.8 times as great as the last 10-year average. That's quite a growth. The engineers probably spent over $300,000,000 gross in order to net that $280,000,000."

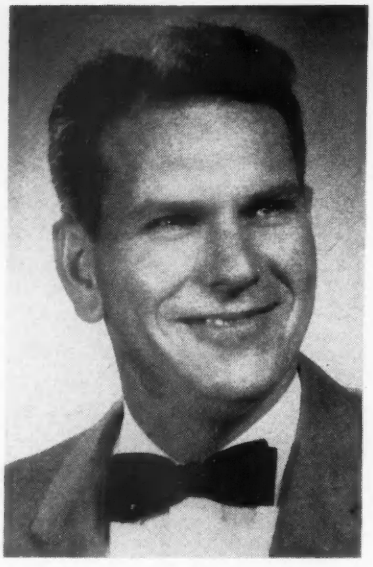
Pointing out that the statistics give an idea of the job the engineer has in the future. Mr. Norris added, "They suggest, too, the serious burden on the engineer who must be sure that the dollars available to him are spent only after considering *all economic* as well as service factors."

"It is largely up to him — the engineer —," he said, "to see that the plant he builds produces — and by 'produce', I mean to show a profit. To meet his obligations he must have more than a handbook to rely upon. He must be appreciative of management's problems and objectives. He must be forward looking, creative in his thinking, willing to use modern techniques and materials and apply good common sense to the problem at hand."

Emphasizing that the telephone industry's product is service, Mr. Norris stated, "It would be wrong for the engineer to think his contribution to the end product concerns only the provisions of facilities free of interruption and facilities over which the customer can hear well."

"These possibly are the main things he should think about," he said. "The progressive, imaginative engineer, however, must think about many other things too. He will be alert to new and better ways of doing things and to adapt new, modern apparatus to his plant — whether the motive be to enlarge the scope of service, to make it more reliable, or more economical.

"He will be professional in his thinking about these and many similar matters, never taking anything



Engineering Conference Speaker H. R. McDONALD, Halls Telephone Co., Knoxville, Tenn.

for granted and getting all the facts before he offers a proposed solution. These, among other things, are *service* problems for the engineer."

Stating that service is criticised time and again by customers whose only complaint is that they can't use the line when they want to, Mr. Norris said, "The record in many of our rate cases testifies to this. So does the continuous and large flow of party line interference complaints."

"We may say the party line customer is getting what he is paying for but I doubt that we can say he is getting what he wants," Mr. Norris said. "In many cases he is not getting what he is willing to pay for."

Discussing urban party versus individual line service, Mr. Norris stated the service and public relations advantages are entirely with the individual lines.

"Also," he said, "for a given number of stations more cable pairs are used. Central office equipment will cost more too, but definitely not in proportion to the increase in cable pairs or lines."

Stating there are many factors to *offset* these cost increases, Mr. Norris pointed out that: (1) Local service revenues will increase; (2) toll service revenues will also increase because there never is a party line block, in or out; (3) intercepting services cost less; so does the cost of instruments and the cost of disconnecting and reconnecting service for bill treatment; (4) costs arising from party line interference are eliminated entirely; (5) clearing certain kinds of trouble (such as line troubles in the drops) costs less on main lines than on party lines.

"There are many other items opposed to party line service," he said, "such as higher distributing frame costs, use of three-conductor instead of two-conductor interior wires and ground rods for divided ringing, etc."

Expressing his doubt that an engineer can place a dollar and cents value on every economic item that he think of, Mr. Norris stated "the engineer can do so on enough of them to show that party-line service is not all beer and skittles, economic-wise."

"This is illustrative," he said, "of the service problems to challenge the engineer. He'll find it and others like it complex. If they weren't they would have been solved long ago."

Emphasizing that it is consistent with good engineering principles to question whether practices, specifications and concepts that were good years ago properly fit into the modern approach to the telephone business, Mr. Norris stated, "We are living in an age of rapidly changing technology."

"We must adjust our viewpoints accordingly or soon be outdated," he said. "We must be careful not to be complacent about the future. We must aggressively think of ourselves as *Communication* companies, not telephone companies alone. If we don't many important communication services will be rendered by someone else. Let us not be like the railroad man who watches the plane whiz by. We must be sensitive to our customer's communication requirements and see that he gets the kind of service and facilities he needs when he needs them and at a price he is willing to pay. In many cases this means furnishing private line services. . . ."

Describing "private line" as the so-called right-of-way services of the type which are installed between two locations of a particular subscriber for his own private use — a line which does not connect to the central switchboard, Mr. Norris stated, "I know that many companies have *not*

been sympathetic to furnishing private line service because they felt it would reduce their tolls."

"This may be true in some cases," he said. "I suspect, however, it is not true in the majority — at least not so some months after the service is established. As customers 'saturate' their private lines, they resume the use of message tolls as much as before. But even if it were true, how long can we prosper if we purposely deprive our customer of what he needs.

"If we don't give him private line service when he needs it, he will provide it himself or ask someone else to do it for him. Then where are we? Our toll is reduced. Our customer is angry with us and we've lost the private line revenue to boot and, more important, we've abdicated our position of being *the* communication company. A positive attitude toward this kind of service many times will place the engineer on his mettle. . . ."

Commenting that private line service development is just a step ahead, chronologically, of *data transmission service*, Mr. Norris described data transmission service as the art by which electrical impulses are sent over a communication channel to a machine which produces from them words, figures and recognizable codes.

"Data transmission service promises to become very important and, within a few years," he said, "a rapidly growing service. The reason for this lies in the many new and wonderful machines being developed — the electronic brain, memory devices and the lesser data processors. Industry's growing knowledge of how to improve its operations through their use will be a factor. These machines are expensive and particularly so if an installation had to be made at each of a company's many branches. But one installation to serve all branches will change the picture. Integrating customers' branches with a centralized installation will be feasible by the use of our exchange or toll lines.

"As data transmissions grow in volume, the number of toll circuits and revenue levels also will grow.

Engineering Conference Speaker ELMER H. DANNER, General Tel. Co., of S. W., San Angelo, Texas. Mr. Danner's paper on "Engineering & Economic Aspects of Microwave Service" will appear in the Nov. 1 issue of "Telephone Engineer & Management."

The number of circuits required may be modified to some extent by the fact that transmission of data can frequently be made at night when they are not so busy for voice communication."

Reporting that practically every business with branches, substations, decentralized production, outlying warehouses, etc., are potential users of data processing and of telephone circuits, Mr. Norris stated that any multi-exchange telephone company might have use for data transmission and processing for getting time reports, cash reports, service orders, material receipts and disbursement reports, etc., into headquarters.

"I predict," he said, "you will hear a lot about a new term — *Dataphone Service* — in the future and here is how *Dataphone Service* will work. An installation of *compatible* equipment will be made at two or more locations for a customer. A toll call will be made from the sending source to the receiving end to announce data is ready for transmission. When the receiver announces readiness, each switches from his regular telephone to his data transmitter or receiver.

"At the end of data transmission they come back on the line for an "OK" and hang up. When they switch from telephone to data, they interpose between the telephone line and the data sending or receiving apparatus a *Dataphone Service Subset.*

"This is furnished by the telephone company. The *Dataphone Service Subset* at the sending end, among other things, changes the 'bit' codes from the tape or what-have-you kind of impulses to *tones* which can be carried over the telephone lines. The *Dataphone Service Subset* at the receiving end reverses the process. . . ."

Discussing the effects of data transmission service on toll volumes, Mr. Norris stated that all the logic of the situation suggests that message tolls will be increased.

"For one thing," he said, "a toll call is required to set up the circuits for *Dataphone Service.* Then, too, the circuit will be held up during the transmission of data. Further, the data transmitted, except to a negligible degree, is not of the kind which uses toll calls today. So, in the overall, we may expect "data transmission" to *increase t*he charged-for time of toll calls. Some students of the subject even think that in 15 years the circuit usage for 'data' may exceed that for voice toll — who knows.

"Data will probably have a greater effect on teletype service. The degree is conjectural. Teletypes will continue to have a use for 'send-now' transmismission. Possibly the greatest effect data will have on teletype service is to slow down its rate of growth as we have seen it in recent years. Not eliminate it. . . ."

Discussing Electronic Switching, Mr. Norris emphasized that "as relays and mechanisms pass out of the picture — very gradually, no doubt — our engineers must know about something more than D.C. circuits."

"Not next year — or the year after — but one of these days," he said, "the equipment engineer — and maybe the plant engineer too — will have to know more about electronics than he knows about them now.

"This isn't anything to be frightened about. It wasn't too many years ago that we broke through the fright barrier and started installing and

maintaining carrier equipment. I can recall — as some of you can — the reticence that accompanied the introduction of carrier equipment to our segment. Now we take it in stride — as we now are beginning to take microwave in stride.

"So it will be with Electronic Switching. The only point is for us to start thinking in terms that one day — before many more years pass — it will be with us. And this is another matter which this new Committee must keep in mind. It should do what it can to keep our members informed and abreast of this and other new developments. . . ."

Referring to the Telephone Engineering Management Course sponsored in 1957 by USITA at Michigan State University, Mr. Norris reported that like many new ventures this course had many many rough spots.

"We learned about them by interviews," he said, "an appraisal survey and by the observations of visitors to the classes. Because the weaknesses are known, next year's course should be greatly improved. And yet, it was interesting to observe that while the participants offered many constructive criticisms, they strongly endorsed the substance of the course and recommended it be continued in 1958. It will be continued."

Mr. Norris reported the Engineering Course is strongly oriented to fundamentals as contrasted to training — oriented largely to engineering economics.

"It does not presume to tell engineers *how* to build plant — they already know that," he said. "Accordingly, we don't have to worry about size and local conditions. Because it is oriented to fundamentals, it is of as much value to the small company as to the large company. We strongly urge that you investigate and give serious consideration to attending or having someone from your company attend the course next year. . . ."

Toll Ticketing Guideposts

EMPHASIZING that members of the telephone industry must always be alert to new developments in the art of communications and

Dr. J. D. RYDER, Dean, College of Engineering, Michigan State University, Lansing, Mich.

to the changing desires of its customers, L. Gray Beck, executive vice president, West Coast Telephone Co., Everett, Wash., also stressed "We must never lose sight of the fact we are in business to make a profit, while at the same time rendering good and adequate service to our customers."

Reviewing many of the items to be considered when a company investigates the possibilities of providing automatic toll ticketing, Mr. Beck discussed three general guideposts: (1) early planning; (2) after the decision has been made; and (3) cutover and post-cutover considerations.

"The fact that some companies have ticketing equipment and others have already started engineering or installation does not necessarily make it proper or profitable for every company to embark on such a program," he said. "Each case must be judged and considered on its own merits. In looking at the economic considerations, such things as means of handling the growth of present toll equipment, the replacement of obsolete toll equipment, the lack of suitable female labor for manual operation, and any particular or peculiar operating problem must be carefully studied."

Describing how the economic study should be made, Mr. Beck suggested a thorough analysis of present and projected traffic expenses. The originating traffic must be studied to find out how much of it can be automatically ticketed. That part which cannot be ticketed becomes a most important factor because it is the most time-consuming from the operating viewpoint.

This traffic, which must be carefully analyzed from the cost of handling standpoint, includes personal calls, collect calls, credit card calls, third number calls, coin box, hotel and other calls requiring immediate quotation of charges.

"You will no doubt find that your over-all office coefficient (units per call) will increase considerably over the present," he said. "Also, if you do not have a substantial volume of this traffic, it will make for a loss in efficiency and a consequent higher cost per thousand units because your traffic force must be provided on a more liberal basis to protect the speed of answer."

Stating the traffic department must also estimate the number of trunk and toll circuits required for DDD, Mr. Beck said, "It should be remembered that these circuits must be provided on the same basis of delay (1 in 100) as the trunking through the local dial unit."

"In making such estimates," he said "your traffic department will have projected the anticipated number of messages, as well as attempts, and will also include a factor for toll stimulation. In some instances, the stimulated toll traffic has been as much as 20 per cent."

Pointing out that after completion of the estimates, the engineering department is now in a position to lay out trunking plans and make an estimate of the costs involved in providing the toll and trunk circuits for the ticketing equipment, Mr. Beck said, "You may want to decide that a particular type is most suitable for your operations."

"The three general types refer to automatic identification of the calling number, operator identification of the calling number, and identification of the subscriber dialing his own number into the ticketing equipment," he reported. "In addition, there is also the consideration as to whether you want equipment that will be compatible with the national DDD net-

work. It is our opinion that the subscriber identification type of equipment should not be considered for use in the national DDD program because of the dialing burden placed on the customer. For instance, with a called and calling number of seven digits plus an access code of three and an area code of three, such an arrangement would require the customer to dial 20 digits."

Mr. Beck described advantages of the fully automatic identifying system as follows: (1) Elimination of operators with a consequent reduction in operating costs; (2) more positive identification of the calling number; (3) greater speed in completing calls due to the elimination of time taken by the operator to key in the calling number; and (4) better public relations because of the more positive identification of the calling number.

He stated advantages of the operator identification system are as follows: (1) No special equipment required at CDO's, therefore less initial cost; (2) no requirement for special dials or other special equipment at the subscriber's instrument to identify a position on a party line; (3) existing toll positions may be utilized to provide for both toll and operator identification operators; and (4) less space required in equipment rooms.

"Also," he said, "during your early planning, it is necessary to look at the billing problem to see whether you will have lesser or greater accounting costs. If you do not have mechanized accounting equipment, you will probably want to have all of your automatically ticketed calls reproduced on a toll ticket similar to the one you are now using. If you already have electronic or machine accounting equipment, you might well find, as we did, that you will want to process all of your toll tickets through your mechanized equipment."

Mr. Beck stated the West Coast Telephone Co., has arranged for all of its DDD calls to be reproduced on cards by feeding the information stored in the automatic toll ticketing equipment to an automatic tape-to-card punch. The residue of toll calls is punched up as the toll tickets are received in the accounting department.

All of the punched cards are then electronically sorted by telephone number, after which the subscriber's toll statement is prepared on a tabulating machine and collated with his monthly exchange card.

"In this connection," he said, "it is well to note that with such machine accounting methods several days time may be saved in producing the subscriber's bill. This is because at the end of each billing cycle the punched cards can be quickly sorted and the toll statement prepared on the tabulating machines much faster than any method of which we know of manually sorting and typing up a toll bill.

"A thorough analysis of present and projected traffic expenses is important. The originating Traffic must be studied to find out how much of it can be automatically ticketed."

"With the steps just outlined having been taken," Mr. Beck said, "you should now be in a position to determine whether the savings in operating costs are sufficient to outweigh the carrying and operating charges of the plant and equipment necessary for your automatic toll ticketing installation. Once you have decided to proceed with the installation of ticketing equipment, there are many engineering problems to be faced. Included among these are the following: —

"(A) *Full intercept.* It is desirable that all vacant, changed or disconnected terminals, as well as vacant selector levels, be intercepted. This is a much greater problem in terminal-per-line offices than in terminal-per-station offices. It is desirable to have all changed or disconnected numbers intercepted by an operator; however, you may wish to consider the use of recorded announcements which give the customer the necessary information or instructions as to how to obtain the wanted number.

"(B) *Proper signals.* The problem of proper signals has just recently been considerably reduced with the announcement by the Bell System that they will no longer use flash and tone, but will use tone only. Things to be considered, therefore, are the 60 and 120 IPM tone for line and selector level busy, respectively, as well as tones for NC conditions, no such number tone, and vacant code. Other signals to be considered are disconnect, off hook, start dialing, stop dialing, dial tone, reorder and ring-back, as well as the use of recorded announcements for unassigned numbers, overloads, or emergencies.

"(C) '2-5' *numbering.* Nationwide DDD contemplates the use of the two-letter, five-digit numbering plan. Local ticketing networks can be operated without the use of '2-5' numbering, but it is best to look toward the ultimate of the two-letter and five-digit system. Assignment of preliminary digits and the corresponding prefix names should be coordinated with the Bell System for your numbering code area. In selecting your prefix numbers, it is well to keep in mind the possibility of future extended area requirements, as well as Direct Distance Dialing so that all code assignments will, inso-

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(Continued from page 81)

far as possible, be suitable for your future plans. Then, too, consideration should be given to assignments which will use a minimum amount of equipment and not result in unnecessary ranks of switches.

"(D) *Compatibility.* Care must be exercised to be certain that your ticketing equipment not only works satisfactorily in your own network, but is so designed and equipped that it can operate into foreign areas. Particular attention should be given to operations into 4-A crossbar equipment and your engineers must be sure that no difficulties will be encountered in timing between two different types of equipment.

"(E) *Transmission.* It must be remembered that with automatic ticketing equipment no operator is on the line to observe the quality of transmission. Therefore, extreme care must be exercised to insure that the transmission characteristics in your system are such that when operating into the over-all switching network in the United States, proper transmission levels will be maintained. Considerable information is available from the Bell System relative to the via net loss factors, which when multiplied by the circuit length give the via net loss over which each circuit can be operated. It is important that the switching equipment in the toll center be designed to meet these via net loss requirements. This includes the use of switching pads and simplex dialing trains.

"(F) *Coin telephones.* It is not possible to complete calls on an automatic basis from the coin telephones, for obvious reasons. So that these calls can be prevented from completion, it is necessary to block access to the ticketing equipment. Where pre-pay trains are established, this is a relatively simple matter, but postpay operation presents a more complicated problem. In the case of operator identification ticketing systems, it is possible for the operator to reject calls placed from a postpay phone by the provision of a tone which will advise the operator that the call is from a coin phone. The use of a distinctive number for coin phones can also be of assistance in helping the operator to identify such calls and reject them.

"(G) *Peg count equipment.* Your traffic people will be interested in the volume of traffic through the various components of your ticketing equipment and it is, therefore, necessary that your equipment be so designed that it is an easy matter to make these determinations at key points in the ticketing system.

"(H) *Centralization of functions.* With the installation of ticketing equipment in more than one exchange, it may be desirable to centralize traffic and other functions, including the handling of information service and repair service. With the establishment of DDD trunks from outlying CDOs, it is a simple matter to make dual use of these trunks to carry the information and the repair service calls to a central point, which may make for more efficient over-all operation and more satisfactory service to the customer.

"(I) *Alarms.* Your ticketing should be provided with sufficient alarms so that the maintenance forces can easily determine the source of any trouble that arises.

"(J) *Routining equipment.* You will want to consider a test desk or some other means whereby the ticketing equipment can be routined from a central location on a regular basis. The test desk should be designed in such a manner that a maintenance man can quickly determine and accurately check where the equipment has failed. This is usually done with a panel of lights, which can be read by the maintenance man, or it can be accomplished by the use of equipment which will supply the necessary information in the form of punched cards.

"(K) *Power.* Not to be overlooked is the drain on your power equipment that the ticketing sytem will impose. You will also want to consider your situation with respect to emergency power availability in the event that the normal power supply is lost. Here, again, your emergency power system should be adequate to handle your anticipated load.

"(L) *Future flexibility.* If you should start in with something less than automatic identification of the calling number and anticipate that sometime in the future you will want to provide this service, then you want to be sure that the equipment you purchase can be readily converted to the fully automatic identification type.

"(M) *Access codes.* Remember our customers. It is very desirable that when you have a requirement for an access code, it be uniform, not only within your own system, but also uniform with the rest of the country. The present standard access code is '112.'

"(N) *No charge calls.* Be sure that your design features provide that no charge will be made for such calls as information, repair service and intercept.

"(O) *Toll trains.* The provision of full toll trains is very expensive and many companies are now providing a modified type of toll train. In many cases, it is possible that calls can be completed over the local train, and calls from foreign areas completed through a simplified toll train,

which is more economical than the full toll train.

"(P) *Adequacy.* It must be remembered that in the use of automatic ticketing equipment, the subscriber is on his own just as he is in a normal dial office. It is important, therefore, that equipment be provided in all elements of your ticketing system in such quantities that a satisfactory grade of service will be given to any customer placing such a call."

Describing cutover and postcutover considerations, Mr. Beck emphasized that before your system is cut into service, you will want an adequate operator training program.

"If you are contemplating an automatic identification type," he said, "the training will be principally assistance such as giving clear-cut instructions to customers who ask, expeditious handling of requesting credit for reaching a wrong number, and methods of connection to the terminating information operator. With operator identification equipment, special training of operators in addition to the above is required with particular emphasis on key pulsing of the originating number. The training course should include generous practice sessions while the equipment is being installed. Then, too, your traffic department can help with adequate instruction of your larger users."

Referring to the *Plant Department*, he stated that ticketing equipment is new and different from most types of equipment industry members have been using.

"It will be found helpful if some of your maintenance force can participate in the installation and testing of the ticketing equipment so that they will have a better knowledge of its functioning," he said. "Then, too, it is desirable to set up a formal training program to provide the necessary information to your maintenance group."

Mr. Beck stated the accounting department must be a full participant in the program "so that you can effect a smooth change-over from your present system of billing toll calls to the new arrangement."

"Obviously," he concluded, "we in the telephone company must be completely familiar with all aspects of the new system, but if we leave our customers out in the cold, it will be all in vain. In developing your publicity program, you will want to enlist the aid of key people in your plant, traffic and accounting departments so that all relevant information can be developed to pass on to your customers. No doubt, you will want to consider the use of such media as newspaper, radio, letters and booklets, as well as personal visits and talks before groups, all with the idea of letting the customer know just what he should do to be a full participant in the new system. . . ."

Values of Continuing Education

POINTING OUT values of continuing education for the Independent telephone industry, Herman R. McDonald, Jr., president of the Halls Telephone Co., Knoxville, Tenn., put special emphasis on participation in such programs by the small Independents as well as the large and proved that the Continuing Education Program sponsored by USITA which was and will again be held at Michigan State University is "truly opportunity knocking at your door."

"These telephone engineering management conferences could and should be the corner stone of all our educational programs in the future," he said.

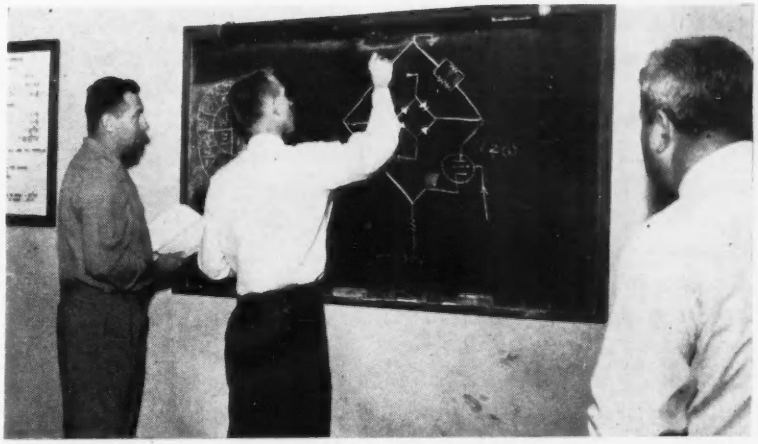
Referring to the development and growth of the Independent telephone industry over the past years, Mr. McDonald stated, "Many of us in the telephone business came into it with varied backgrounds."

"Some were reared into the business," he said, "some came in to make money, and some of us did not know what we were getting into. How did I get into the business? I came in through ignorance. From that time on my education has certainly been continuing. There is no doubt that the three years of mechanical engineering background came in handy. With that it did not take much more than a pair of pliers, a screwdriver, and a limited amount of tools to keep going."

McDonald then pointed out, "there is more to the telephone business than keeping up a physical plant."

"Actually," he said, "we did not know we were broke until we began keeping books. Naturally the first phase of our education was that of the physical plant. Good maintenance kept the existing subscribers off our necks and the improved service brought in new subscribers. The next phase of our education concerned itself with bookkeeping and accounting.

"Now we find ourselves in a half billion dollar business. Many of you have several times that amount invested. Think of the problems that came with your growth. Think of the decisions you had to make. Too many of us were so involved in keeping our heads above water that we could not focus on any objective. Think how much easier those decisions would have been had we had a broader concept of the business. If we had



"You are involved in a continuing education process. If there had been no value in your education you would have fallen by the wayside many hard miles back. . . . These telephone engineering-management conferences should be the cornerstone of all our educational programs. . . ."

money, we could have hired trained personnel had it been available. . . ."

Emphasizing that companies do not hire telephone personnel, "they hire an engineer, an accountant, a bookkeeper, or some bright high school student and then teach him telephony." Mr. McDonald stated, "if you can not afford to do this, then you must learn to do the many things yourself."

"In either case," he said, "you are involved in a continuing education process. If there had been no value in your education, you would have fallen by the wayside many hard miles back. The value of continuing education is most exemplified by the number of our top people who have had no formal education. Many of our leaders today are of that group.

"More significant is the fact that they realize the value of and are pushing as hard for education programs as anyone else. If you need to convince yourself, observe your present position. Are you satisfied? How much of your success is attributed to your continued education?"

Referring to his company as "one of the smaller Independents," Mr. McDonald, reported his company has slightly less than a thousand stations.

"I am here," he said, "because our company was the smallest to participate in the program at Michigan State University (MSU). Furthermore I am here to encourage other small companies to participate in the future conferences because we have so much to gain."

Commenting on the MSU program, Mr. McDonald stated that after attending the telephone engineering management conference, he "was able to put a finger almost directly on errors we made that amounted to from 10 to 15 per cent of our total investment."

"In our case," he said, "that would be between 50 and 75 thousand dollars. In spite of this we have been told that our plans and procedures were very good. That is a little hard for me to swallow but it indicates that there are others who are worse off. This is a large percentile of aggregate errors in planning and judgment. However we are talking about modest investment compared to many of you. What would a 2 to 5 per cent error mean to your company? If this school helped you to save your company 2 per cent it would be worth several times its cost. There is no doubt in my mind that this conference could do it. . . ."

"Engineering-management conferences bring about a mutual respect and understanding between engineering and management. . . ."

Emphasizing that small companies need to take part in the conferences because they do not have enough personnel nor a large enough operation to establish adequate training programs, he stated that in his opinion "we are often so close to the job at hand we miss the purpose of our objective. . . . This is a chance to get on top of the hill where you can see the entire pattern of the valley below."

"I have a standing offer to any company who has a single customer who uses your services because of that customers' personal affection for your company," he stated. "They are your customers because they have a desire or need for your services and can afford to pay. That is all we have to do to stay in business. Give the customer good service at less cost and we increase our market. The way to do this is to cut down our costs. One way to cut down cost is to operate more efficiently. Adequate training improves efficiency. That in my opinion is the primary objective of the whole of our educational programs. . . ."

Mr. McDonald stated that the MSU conference contained six major segments: (1) Fundamental economic concepts; (2) cost considerations in engineering decisions; (3) engineering fundamental plans; (4) operation analysis; (5) communicating engineering decisions; and (6) technological horizons.

"When I first looked over the course, my observation was that at last here is a chance for an engineer to find out what things cost," he said. "Here we could put a dollar sign on every dream cloud. You see, I have always thought that engineers made the poorest managers in the business. After studying these courses it became evident that it was management's errors that were reflected in the engineering.

"The engineer did a good job with what he had to do with. If nothing else the telephone engineering management conference will bring about a mutual respect and understanding between engineering and management. This will give all of us better cooperation to improve coordination of men, materials, and money. This is the key to our objective. . . ."

Asking, "Who should go to these conferences?", Mr. McDonald said, "everyone in the business should go."

"If you have any desire to improve yourself, go," he said. "Give this a few minutes of thinking. Your job is secure so long as your company prospers; and you, through your work, contribute to that prosperity. What better approach is there to security than your knowledge and skill? That is why I say these telephone engineering management conferences represent opportunity knocking at your door. Here is a plan to help you to help yourself. Your companies, both large and small, can and will

pay you more if you can do a better job. This also applies to the small operator who is his own boss.

"You may feel that you need a couple of degrees before you can keep up with the course. Not true. The brochure indicates who the program is designed to help. I would venture to say that if you still remember half your high school education and have any experience at all you will get value received from the course. The instructors at the conference are intelligent enough to teach the courses at a level you can understand. MSU is to be commended on the quality of its instructors."

In closing he urged his listeners to "Go to these conferences," and find the answer to your prayer. — 'Lord, help me to know myself, help me to know other men. Help me to do those things I can do, to leave alone those things I can not do, and Lord help me to know the difference'."

The Future Of Engineering Education

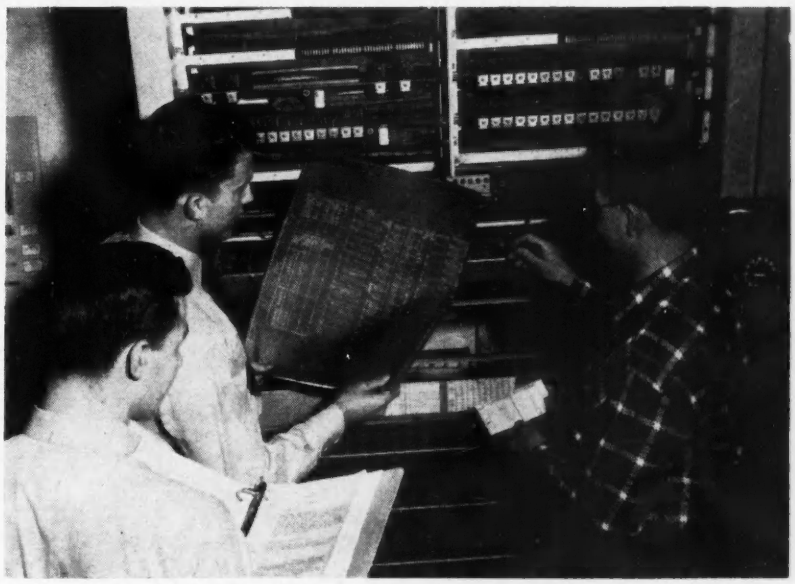
MICHIGAN STATE University's Dean of Engineering, J. D. Ryder, told the Engineering Conference, "The stable, nicely bounded, empirical form of engineering education of the early part of this century, a time of pleasant relationships and repetitious teaching for engineering faculty, has now largely disappeared amid a modern rat race of new discoveries, new principles, and research looking to devices of the future."

"Engineering education," he stated, "has only begun to realize that the United States is building a new form of civilization. We have had civilizations based on slavery, on the spoils of conquest, on the gold of a new world, and on the profits of colonial development. Ours is the first civilization based on the product of our own brains, on conquest of the science of nature. We have also begun to realize that the engineer is in the forefront of the tremendous battle to prove that our form of civilization, based on science, is better than another form based on the exploitation of the individual, and that it is the engineer who can win or lose this battle for us. . . ."

Discussing reasons for the modern trend in engineering education, Dean Ryder said one of the most evident reasons is "the terrific breadth of the field of engineering of today."

"A civilization based on a raw material economy has small use for engineers," he said, "but a civilization based on manufactured goods and industry can only live because of the engineer. Most of us fail to realize the tremendous progress which has been made in our move to a manufactured goods economy and the high level of the platform from which our modern graduates take off. . . ."

Emphasizing that the problems facing the engineer of tomorrow are more difficult and complex than those faced 50 years ago, Dean Ryder stated, "The easy problems have been solved and we are working at higher orders of difficulty."



"The easy problems have been solved and we are working at higher orders of difficulty. . . ."

"This difference in order of complexity of the problem is going to be much accentuated as we move into the age of computers," he warned. "Here we are faced, not only with problems involving new engineering ideas, but with problems which could not have been solved at all in any man's lifetime before the day of the computer. These devices bring problems involving many man-years of work down into a few minutes or a few hours of machine time — thus the more complex problem not only exists and faces us — its solution is also possible and practical."

Pointing out that the preparation level of the 1920's or 1930's is not sufficient, Dean Ryder emphasized that "In our search for a common denominator which may be used to guide engineering education of the future, we have found only the fundamentals of science as given to us by nature on this earth."

"These principles are not going to change," he said, "whereas applications in terms of particular devices or methods are almost certain to change; in fact, by the time they can be taught in a university they are already out of date. This *trend* back to fundamental science is not a new thing, but the realization that the trend *exists* is new to many engineering educators and to many practicing engineers. The road of science seems to be the highway along which future engineering education will progress."

To adequately tackle the new job facing engineering education, Dean Ryder stated, "we must understand what this thing is that we call engineering," and referred to a definition which states that: "Engineering is the professional art of applying science to the efficient conversion of natural resources to the benefit of man."

"This is a rather idealistic definition," he said, "and I feel that the main difficulty with it is the presence of too many words whose meanings we do not fully understand. Certainly, there is nothing within that defini-

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tion which tells the engineering educator what his job is, and I believe as a result we do not understand that job.

"To better understand, it seems to me that we should go to the definition itself and rewrite it. To this end, I propose, as a new definition for the field of engineering, the following: *'Engineering is the science and art concerned with the utilization of materials, energy, and men'.*"

Proposing first, that man be elevated to equal importance with materials and energy as a concern of the engineer, he stated that no practicing engineer in the modern day can work in an uninhabited vacuum.

"He is inevitably entwined and concerned with other people," he said. "He supervises these people, he directs their activities. He must get from them the maximum amount of cooperation and finally he must design devices and develop new knowledge which will be utilized by, and be of great concern to mankind. Engineers must be prepared to work with people, they must be able to talk to the lawyers, to the cost accountants, to the presidents of their companies, not in engineering language but in the language of these other professions."

Dean Ryder emphasized that to the field of engineering education "the really important factors in this proposed definition of engineering are contained in the words *science* and *art*, and the university is in the position of asking what the part is that it should attempt?"

"It would seem the answer to the question should be self-evident," he added. "A science is a body of knowledge, it allows understanding of the *why* of nature. An art is skill in the adaptation of things, an art teaches *how* to do. A university by basic concept is well fitted to the teaching of knowledge, and therefore it should undertake the preparation of the young engineer in the science, the *why* of things on this earth.

"An art is inherently foreign to the concept of a university; a university is removed from practice, and it would seem most logical that the art of engineering should be taught by the engineering employer, by industry. This is also logical in that it is on the frontiers in modern industry or in the engineering offices where the new art is originated. . . ."

Stressing the fact that the duty of the university is to reach the fundamental basic science and the duty of the engineering employer and of industry is to teach the art of engineering, Dean Ryder stated that to this end a recent publication of the Educational Policies Commission of the National Association has recommended that "Industry should undertake more of the task of specific job training than it has in the past assumed, seeking to develop such programs at a professionally sound level."

"This method is going to pose problems," he said. "first, because this is not the way it has been done, and secondly, because it represents actually a partnership between the university and the engineering employers in the complete education process of the engineer. Working out the details of this partnership, particularly the methods whereby the university can aid the industrial employers in the education process which must take place in the factory and offices, is going to take time.

"This shift in emphasis is also going to throw a burden on certain employers who have not accepted this modern concept of engineering education. That is, the universities are no longer preparing a man to hold a job upon graduation, but they are preparing a man to hold a very good job 20 years after graduation.

"There are still many industries who expect to hire a young man and immediately have him able to undertake work which will show a profit to the company. If any industry expects this, they should hire a technician, not an engineer. Fortunately, the number of such companies is not great, and the number of engineers which they annually employ is even smaller. . . ."

Editor's Note

To bring you the highlights of the various USITA Conferences we have condensed many of the papers and reports. If you want a complete copy of a report write United States Independent Telephone Association, 438 Pennsylvania Bldg., Wash., D. C.

More Vibrant Industry

(*Continued from page* 57)

The little boy tied the puppy on his front lawn, along with a sign which said: "Puppy for Sale — $400." When a friendly postman came around and saw the sign, he asked the little boy if that wasn't kind of a stiff price for a puppy. But the little boy insisted that $400 was the price he was going to get for the puppy, or he wouldn't sell him at all. The next day the postman noticed that the sign was gone and so was the puppy. Then he saw the little boy and his curiosity prompted him to ask if he had gotten his $400 for the puppy. "Yes, sir," answered the boy, proudly, "but, of course, I had to take back a couple of $200 cats in trade."

That brings us to the second problem I would like to mention as clouding our future before getting on to more pleasant topics. I refer to the problem of rate relief. It is entirely possible that wiser heads in Washington or elsewhere will eventually find some way of halting this steady march of inflation. But they have not found the answer yet and for the immediate future it is only being realistic to assume that inflation is going to be with us, until we see some definite signs to the contrary.

The Cost of Money

ALONG SIDE of inflation, of course, we have more recently been confronted with the problem of the increasing cost of money. Our companies must naturally expect to pay more for new capital. But our industry's position on this would be a lot stronger if we could be more certain of co-operative regulatory action in rate cases. How are we going to pay 6 per cent or even more on bonds — and that may be necessary for some companies — and how are we going to sell junior securities, unless the investor is aware or has some assurance that our companies will be permitted to earn enough dollars to pay off?

Some of our present regulatory thinking, which looks to the past instead of the future, and insists on regarding original cost dollar investment without regard to the loss of present-day dollar value, is getting more and more out of step with the times. The result of this kind of thinking, where it exists, is to put our telephone industry and other regulated public utilities in a financial strait jacket.

It amounts to regarding the utility investor as a second-class citizen, financially. It has the effect of telling him that every other industry, every other business, every other type of investor is entitled to share proportionately in the growth of our economy, but he cannot share in it. He is to be confined to the dollar earnings of his original cost investment. The inescapable effect of this would be a flight from utility investment at the very time when more and more capital will be needed to realize our opportunities of further expansion.

Let me hasten to add that I am not at all pessimistic about this over the long run. But I mention it in passing as one of those problems which still has to be licked. President Eisenhower recently referred to inflation as the greatest single domestic problem confronting his administration. I think we would all be inclined to agree with that.

But I have confidence that responsible regulatory authorities will face up to the requirements of our essential public service industries, and will do what is necessary to keep an adequate flow of investment capital available to us. Our job, of course, and I refer now to Independent companies, as well as to the USITA and our state associations, will be to show what is necessary. It will involve a never-ending task of education and publicizing our industry's economic needs.

As far as rate cases are concerned, I see no immediate end in sight. Indeed, I think we will have to expect individual companies to seek rate relief, at more or less regular intervals, as long as this march of inflation continues. Public utility companies cannot be expected to hold the line on prices when the line is not holding anywhere else.

Service of The Future

BUT LET US turn our sights now to the pleasant prospects of the future. And again, these are matters which will be of concern to your national association in the period ahead, just as they are to individual companies. I believe I could sum up these general prospects under the heading of five "S's," Service, Size, Shape, Scope, and Success.

First, let us look at independent service of the future. I refer to the business our Independent companies can hope to do if they are equipped to handle it, and go after it in the right way.

I said earlier that things are coming our way. That is certainly true in almost any area of the country you care to inspect. Some places, of course, such as Florida and California, are going to experience phenomenal growth, according to all reliable forecasts. But even in those states, where the projected population and business growth are less spectacular, the trend is away from the larger cities. It seems like everybody, that can afford to do it, wants to move out into the suburbs, and people already in the suburbs are moving farther out into the country.

Indeed, one of the real problems of our city planning and economy in the future would appear to be how to save the central districts of our older and larger cities from developing into slums. The more affluent taxpayers are moving out, and the tax-eaters are moving in.

While this is a matter of concern to all of us, our Independent industry finds itself in a relatively better position because our operations have been from the very beginning not based, mainly, on serving the central areas of the older, larger cities. We have some quite large city service, of course, in our Independent indus-

try family. But on the whole, as you well know, the Independents started out by taking over the service responsibility for the smaller communities. And it is these communities which are today, and for the years we can see ahead of us, experiencing the greatest proportion of growth in business activity as well as population. The opportunity is ours, therefore, if our companies can equip themselves to take advantage of what the future brings.

That brings us to our second "S," Size. I know there has been some concern expressed over the declining number of Independent company organizations. Of course, this is a trend which had been going on for a long time, possibly for as much as 30 years.

I note in the historical booklet which USITA published for this 60th anniversary, reference was made to the fact that in 1927 there were 8,000 Independent companies. Today we have around 4,400. Yet, if we check back over this 30-year interval, we will find that the decline has been more or less constant. What is more important is the fact that these surviving 4,400 companies are today doing more business than ever before, serving nearly 11,000 exchanges with over 9.5 million telephone stations. With an investment of $2.4 billion, they serve nearly two-thirds of the land area of the country.

These Independent companies are stronger and better equipped than ever before in the history of our Independent industry. There is every reason to believe that growth will continue and that economic strength will increase. We have got to realize that this tendency towards stronger units is not something peculiar to the telephone industry by any means.

It is a natural and, to some extent, necessary evolutionary process. As industrial operations become more complex, individual companies must find their own economic level, just like the flow of a stream of water. No one can say what is the best size, or that there *is* any optimum size, for Independent company operations. The circumstances are bound to vary in each case. There is a place for many sizes of company operations in the future of our industry. But where a company finds its operations becoming too difficult to continue with small-scale organization, it is only natural that it join forces with other adjacent organizations as a mutual solution to the same problem. The main thing, of course, is to establish an organization which can do the telephone service job that is necessary and do it efficiently, effectively and profitably.

The "Shape of Things To Come"

IN DISCUSSING my third "S," which stands for Shape, I refer to the shape of things to come. Not being a technical man, I would not presume to approach this from the standpoint of describing what is coming up in the way of future developments in equipment and operating practices. But we do know that some important changes are in prospect, just as important changes have been occurring all along. It is probably safe to say that during the past few years there has been more emphasis on the merchandising of telephone business, through new appliances and special service equipment, than in any corresponding previous period in the history of the industry. It is this accelerated pace of these new developments which must not catch us unawares.

As our Independent industry moves closer and closer to the goal of complete conversion to dial, the pressure for new and better ways of conducting our business will increase and it will surely result in a steady procession of equipment and plant improvements.

Electronic switching, newer, and lighter forms of telephone sets and considerable advancement in long-distance and toll traffic operations are definitely in the works. Items which are in the laboratory today will move onto the drawing board tomorrow. And what is on the drawing board today will move into production tomorrow.

It will take an alert and well-informed Independent telephone industry to keep abreast of this march of progress. Here again our national and state associations will have their parts to play.

The day has long gone when the telephone business could be considered in terms of merely exchange plant and pole-lines. The shape of things to come will surely make greater use of both radio and electronic developments. Through that use our Independent companies can look for their share of a prosperous future for the industry as a whole. We have already had much success in the merchandising of telephone appliances and special services, such as colored telephones, extensions, multiple subscriptions, hard-of-hearing and special signaling devices. But the surface has only been scratched.

The time is coming when no telephone company, however small, can expect satisfactory results without sustained activity and promotion along these lines. Thanks to effective advertising and publicity, the public is coming to expect these things of us, to an increasing degree. We must deliver the goods.

"The Scope of Our Operations"

THAT BRINGS me to the fourth "S," the scope of our Independent industry operations. This is a most important topic because of the uncertainties involved. I refer to the broad policy questions now being argued before the Federal Communications Commission, as to the role of the telephone industry in such fields as mobile telephone services and the use of microwave frequencies.

Along with the Bell companies, your national association has already taken steps to protect the interests of the telephone industry, as such, in these newly developing fields of communication. There are those who argue that the telephone industry should be confined to a conventional station-to-station operation and that these newer forms of communication service should be denied to our industry.

Needless to say, we do not accept that view. We con-

sider the telephone business, not as a static art, but as a dynamic service which should be permitted to expand in scope as new technical facilities and practices become developed.

We must be aggressive in promoting that view. If we are not, we could be arbitrarily cut off in the scope of our future operations.

We must always bear in mind that our business is voice communication — *two-way* voice communication! It is a distinct type of service, in a class by itself. It not only differs from the one-way written or recorded communications traffic, which is exemplified by the telegram, or the United States mails, it is also different from the mass communication media, exemplified by radio broadcasting and television broadcasting and even daily newspaper coverage.

Only in the telephone business is there a real substitute for living, spontaneous conversations between persons, for the free exchange of ideas or other human intelligence on a confidential person-to-person basis. So if we are to fulfill our obligation of public service in the telephone business, our industry must be permitted to expand its scope in any manner in which two-way voice communication can be effected, whether it be by wire or cable or radio relay, or mobile radio, or point-to-point microwave.

The principle is the same in any case. There is no logic in cramping the scope of the telephone industry by denying or unreasonably curtailing the industry's use of these new arts. There is much work to be done in this area, in the years ahead, and I venture to say that this national association will be right in the thick of it.

"Success In The Public Interest"

MY FINAL "S" stands for Success and, in a way, that is what I have been talking about all along. But the success I refer to here is not only the success of profitable operation — making enough dollars to pay enough dividends to keep the shareowners happy.

If our Independent industry is to realize its full potental in a more and more vibrant future, it must be a success in every sense of the term. Primarily it must be a success in the public interest. It must give the public what it wants and create public confidence in it as a public servant.

It must also be a success in providing for the people who work for it. It must merit the confidence of its employes, so as to attract qualified men and women to its ranks during a period of increasing shortage and industrial competition for personnel. The industry must be a success as free private enterprise in order to attract the necessary capital to keep plant expansion going at the proper pace.

And, of course, there can be no success if nobody knows about it. A good public relations position is a veritable "must" in our industry's future. Again, our national association must bear considerable responsibility for accomplishing this goal.

JEAN AUGUSTINE, Lexington, Va., and her son, ARTHUR M. SMITH, attended the recent USITA Convention.

CLIFF McCORMICK (right) new president of General Tel. Co. of Upstate, N. Y. receives congratulations from friends on his recent promotion.

What will a more and more vibrant industry mean in terms of new business? I recently had occasion to make some forecasts, based on statistical trends now in evidence. And I would venture to say that if present population growth and economic trends continue as they are generally expected, the Independent telephone industry may be serving nearly 12 million telephones by the end of 1960 and may have in operation some 26 million by 1975.

In conclusion, I would like to thank the officers, directors, staff, committeemen, and the membership at large of the USITA for the many courtesies and considerations they have shown me during this past year of my presidency. Traditionally, the retiring president's address is supposed to be a sort of accounting for his stewardship. Actually, in my case at least, I must confess that I learned more than I contributed. I found upon taking office a well-established and effectively operating national organization.

I would like to take this occasion to assure all of you that you are well represented in Washington and elsewhere by this association of yours. I knew that before I took office. But I know it now all the better from close and actual contact. This year brings to a close a most pleasant and rewarding experience. I would like to express my appreciation for the confidence you have bestowed on me and the unfaltering co-operation extended to me while I served as your chief officer. I am most grateful and I pledge my co-operation in the future to the incoming president and other officers to do all that I can, in whatever capacity I may be called upon to serve, in assisting this association towards a more and more vibrant future for Independent telephony.—*Donald C. Power.*

Common Goals

(*Continued from page* 59)

when it means having the other fellow do things our way. We all like that. But in real life we usually have to settle for something less. It's a matter of give and take. No one can cooperate with a stiff neck. We have to bend a little.

On the other hand, being anxious to cooperate doesn't mean that anybody ought to give the other fellow his shirt, either. I guess no one in this business expects anything along that line. But we can always meet with good will and in good spirit, and work out common problems on a sound business basis. I have full confidence that we shall continue to do exactly that.

Anyway, that's what we're going to have to do, because this country needs a big, growing, unified, common carrier telephone system — one that will always be ready for any job. It must be strong in its people, strong in technology, and strong financially.

And all these assets, as I've said, we must employ throughout the industry so that we meet — together — this fascinating challenge of providing more service and improved service and entirely new services as our customers want them; doing this in a way that mixes all the skills of marketing, financing, engineering and operating — so that we go as fast as we should but not faster, and give the public the most we can while at the same time we earn enough to make still more progress possible.

With that sort of goal in mind, I'd like to say a little now about a few specific problems of our industry — problems that are important to us all.

Competition

ONE OF THEM is this matter of competition. It seems there are quite a few non-communication companies today that would like to provide a considerable part of their communications themselves, without depending on the common carriers. In particular they want to build private microwave radio systems and are asking the F.C.C. for permission to do so.

Of course this goes against the basic principles and experience which have shown that the public interest depends on common carrier service. Indiscriminate licensing of non-common carriers to build their own systems would not only sacrifice the most efficient use of the radio spectrum; it could very seriously interfere with the ability of the telephone companies to serve the public at reasonable prices.

Thus any possible advantage to non-common carrier licensees would only be obtained at the expense of the general public. I realize that right-of-way companies and public safety organizations may have some need for private systems, but these are special cases.

Our industry position is clear and sound. Both your people and ours have stated it, but we all need to keep talking it to be certain that others know and fully understand it. We are sure common carrier service results in lower costs to the public. We are confident it also makes possible much more efficient use of the radio spectrum. We know a strong common carrier network is a much greater asset in time of emergency or war than a fragmentized hodge-podge of private systems could ever be.

Today I only want to add this comment:

In the long run the public will approve a decision in our favor, not on the basis of hearing-room testimony, but on the basis of how well we in the telephone companies jointly succeed in providing the services our customers want.

Here is another matter that seems to me to concern the whole industry:

What do the people who are working in this business really know and believe about the outfits they are working for?

That depends mostly on how diligent the companies are to give employes the facts, and on how well we succeed in demonstrating our sincerity.

I'm sure we *must* succeed in this, for if most of the things employes know or think they know should come from some of the union papers and union press releases I see, they will certainly get some strange ideas.

For instance I saw a union editorial the other day that had the Bell System waxing rich and practically choking on fat profits. This kind of thing is so absurd, you may wonder why I even mention it. The reason is that the problems which unions and managements are concerned with are so important, not only to them, but to the public and the nation as a whole, that there just isn't any room for careless or misleading talk.

You and I know that the telephone companies are bound to provide wages and working conditions that compare favorably with other industry and offer attractive opportunity for willing and industrious men and women.

We can't make progress in any other way. I'm simply saying here that the need to accomplish the best for all concerned — for employes, for customers, and for investors — absolutely requires a thoughtful and factual approach. Nothing else will do. Frivolous and unconsidered statements can only cause harm — the more so if by silence we seem to give them our consent. What we need is to get such a steady stream of truth flowing that there's no room in the river for anything else.

Earnings

ANOTHER big industry-wide job is to get enough earnings. Telephone service has been a low-earning enterprise now for a long time. It ought not to be. To be sure we've improved — at least most companies have improved — quite a bit in recent years. But most of us still have quite a way to go. I also think that to go that distance we need to keep hammering at a basic idea.

This is that in the long run, good earnings mean better service at lower rates. A large segment of the public and too many of the commissions have quite a different idea today. They seem to think low earnings mean low

rates and good earnings mean high rates. It is this climate that has made us a low-earning business in the postwar period.

Can the climate be changed? I certainly think it can. The public today has no idea that the lowest-earning soap company makes the best and cheapest soap, or the lowest-earning automobile company the best and cheapest automobiles, or the lowest-earning meat-packer the best and cheapest hams.

Why should we let the idea hang on that the low-earning telephone company gives the best and cheapest service? We know it isn't so and we also know that people don't have this idea about other kinds of businesses. Why should they keep this false notion about us?

The fact is, and I know this is repetition, that good earnings mean quality service at lower cost to the user. And good service is much more important to our customers than the precise rate they pay.

We simply must show the commissions and the public that the only way to telephone progress is through telephone prosperity. As I said at the start, we have tremendous new opportunities to provide improvements in service and a great variety of new services. These will add to the convenience and comfort of men and women everywhere. They will help other businesses and make a very large further contribution to the progress of our national economy. But all this potential achievement depends on our earning well.

We must raise capital in huge amounts. We must continue to push research and development work. We must take new and substantial risks. We must not merely keep, we must enlarge and deepen the respect and faith and trust of people who have money to invest — both those who have already bought our securities and those who have never done so before.

Is it asking too much of regulatory commissions to exercise, in fullest measure, their practical judgment, their imagination, and their political courage? I am sure it is not. And I am especially sure of this when I reflect that the problems which confront the regulator when a business is successful, and can go ahead progressively from one achievement to another, are as nothing compared with the problems which confront him when a business doesn't have the money to do what ought to be done.

Today in many states we see a glaring inconsistency. Their efforts to encourage and attract new industry are very different from the consideration they give to our industry which is already there.

Do they really expect to attract others and bring employment and prosperity up, while at the same time they regulate telephone expansion and employment down? I cannot believe it.

It is our job to demonstrate that every state needs our financial good health, not only for what this means in direct telephone employment and wages, but equally or even more for what we can do to help make the state attractive to others. One of the first things any industry wants to be sure of is that it can count on full and fine service from us.

I have only one other specific matter to mention which seems to me of top importance.

With a tremendous service job ahead —

With lots of competition all around us —

With the need to better our earnings —

With the continuing challenge of dealing with the unions in ways that will be fair to employes, fair to the public, and fair to the share owners —

With this kind of future, it seems to me a plain necessity that we do the very best we can to help build our future telephone management.

This is a many-sided matter. It is not something for which we can find a formula. Nor is this a job that some of us can work at and others leave alone. It is the responsibility of every boss in the business.

I put it that way because the great essential is to have the kind of working atmosphere in this business that gives people air and room and freedom and incentive to grow. And it is the boss — all bosses together — who determine that atmosphere.

Throughout the industry we are doing many things to try to aid the process of growth. We are broadening enginering training. We are using conferences, case studies, discussions and courses of various kinds to broaden the knowledge and outlook of our people.

But in my judgment all these activities, valuable as they may be, can only be effective as aids to growth in the right kind of climate — and for that the boss is everlastingly responsible.

We'll do the best job, I'm sure, when — and only when — every boss acts on the understanding that an indispensable part of his assignment is to do everything he thoughtfully and reasonably can to encourage the growth of his subordinates.

Perhaps you will agree that these broad industry problems I've been discussing make quite a handful. We have a real job ahead of us. But in closing, I'd like to express again my complete confidence in the forward motion of this business. The longer we go, the greater the promise of the future seems to be.

You in this Association can now look back on 60 years of progress, and I congratulate you again on that. However, you don't need to look anywhere near that far to be conscious of great achievement. What you have brought about in the last decade alone ought to make you feel pretty good. And in the years to come, you must be well aware that the very nature of this country's growth, and the kinds of changes that are in the making, give you spectacular opportunities.

Yet I'd rather end on this note — that the job ahead is not partly for you to do, and partly for us in the Bell System to do, but rather, that all of the job is ours to do together. For it is the kind of service that grows out of this concept that the public will surely insist on, and we must surely deliver. I'm confident we're going to do it, and our being here together this afternoon is further evidence that you have the same idea. Thank you again for the privilege of talking to you.

USITA Plant Conference Report

(*Continued from page 76*)

prevented, plastic cable guards should be placed around the RDW. . . ."

"Miss Telephone Service"

DESCRIBING "Miss Telephone Service" as "one of the answers to the challenge of building public relations." J. R. Yeager, commercial superintendent, Telephone Services, Inc., Lima, Ohio, told the USITA Plant Conference, "we might call her an emissary of goodwill and, at the same time, provide her with some duties to make her more than self-supporting."

"Management," he said, "has always had problems to meet but of recent years that of subscriber relations has become one of major importance. Recognizing that fact, Mr. George B. Quatman, president of Telephone Services, Inc., conceived the idea of introducing to John Q. Public a new high in telephone goodwill.

"Believing in the old adage that 'Goodwill consists of 90 per cent of what is done and how it is done and 10 per cent explaining it,' Mr. Quatman felt that a comely young lady calling on individual subscribers to check their telephone service would be a successful venture. In addition, she could make necessary minor repairs and adjustments and assist in correcting their service problems. In that way, we could render a personalized good will service and accomplish a maintenance program. . . ."

Discussing the selection of personnel for this position, Mr. Yeager stated, "it is preferable to use a present employe . . ."

"However," he said, "the person chosen must also have leadership ability, mechanical ability, a pleasing personality, and be attractive to the public. She must have the ability to think for herself. These qualifications are essential. In many cases, 'Miss Telephone Service' will be the only contact between the customer and the company . . ."

Mr. Yeager suggested that after selecting the proper person the following procedures should be followed:

(1) A complete resume of position requirements and duties should be presented to her. Stress should be placed on the many problems that may arise. It is important, at this point, to impress the applicant that this type of work is not just an opportunity to cruise the community in a company automobile. She must realize that on her shoulders rests the success or failure of the project.

(2) Enrollment in a class in Effective Speaking and Human Relations is the first step in the training program. Tutoring in the course is done by a company department head. All Telephone Services, Inc., management personnel have had training in this course. Completion of this class assures the company that "Miss Telephone Service" is well qualified to win friends for the company.

(3) The applicant is also given extensive training in the repair, adjustment, and maintenance of the telephone instrument. This will enable her to make any minor repairs.

(4) Finally, she is indoctrinated as to company policy, financial status, tariff regulations, availability of services, cost of services, etc.

"At this time," Mr. Yeager said, "the applicant should be made to feel important to herself and to her position, that management needs and respects her, and that she is part of the company. It is our sincere belief that the employe should know all the facts. Being well informed will make it easier for her to do the job right, than to explain why she didn't. . . ."

Mr. Yeager reported that during the period of indoctrination, "Miss Telephone Service" is measured for specially dsigned clothes. Her suits are patterned after the uniform of an airline hostess. Worn with a white blouse and overseas-type cap, she presents an attractive appearance. For summer wear, the suit and cap is natural linen. For inclement weather a tan raincoat is furnished. The winter uniform and cap is of dark blue cheviot worn with a dark blue belted military style overcoat. On the uniform, the insignia, Telephone Service, is placed on the left top pocket of the coat and on both sides of the overseas cap. The raincoat and overcoat have the insignias also. For carrying necessary tools and replacement parts, a tan leather shoulder utility bag is furnished.

"In the Lima, Ohio, exchange," he said, "a small Italian Isetta car is used for transportation. It is inexpensive compared to American models and very attractive. The car has created much interest and helped to publicize our service."

According to Mr. Yeager, "Miss Telephone Service" follows this operating routine:

(1) Prior to making her first subscriber contact, "Miss Telephone Service" visits the trouble desk to acquaint herself with the line cards. It is from these cards that her daily call list is prepared. Upon deciding on the area to be checked, a list of subscribers in that area is made. This list is compiled on regular trouble report forms listing name, address, telephone number, type of service, type of equipment, and number of instruments. Each subscriber is listed on a separate form. Selection is made for the first subscriber contact, and "Miss Telephone Service" is ready for her first assignment.

(2) The selected subscriber is called *from* the telephone office for the first appointment. Upon being answered, the representative identifies herself and requests the privilege of calling on the subscriber to inspect the telephone instrument. It is particularly stressed that she has nothing to sell.

(3) If the subscriber will not be at home, a notation is made and filed for future contact.

(4) On keeping the appointment, "Miss Telephone Service" visually inspects the drop for tree conditions or other apparent trouble. She then introduces herself at the door reminding the lady or gentleman of the house of her appointment. It is im-

portant on entering the house that she compliments the housewife on her home and if children are about on their appearance and behavior.

(5) She inquires as to the location of telephone instruments and proceeds as follows: (a) cleans and polishes instrument; (b) checks line and handset cord; (c) checks dial and dial speed; (d) checks instrument and handset shell; (e) replaces number card if necessary; (f) makes reverting call to check ring in and line clearance; (g) checks for current directory; (h) inquires as to any problems being encountered by subscriber use of their service; (i) reports any special operating difficulty to proper department; (j) suggests additional service needs, such as extensions, bells, gongs, etc., and quotes the small additional cost of same; (k) lists work completed on trouble form to be returned to trouble desk for permanent record on line card; and, (l) calls next subscriber for appointment using same as a check call.

The completion of this subscriber call," Mr. Yeager said, "together with others made each day, will make friends for the company. It helps to improve the quality of service and by the application of a preventative maintenance program saves many dollars in the instrument maintenance account. . . .

"It is impossible to measure in dollars and cents the actual value of the goodwill generated by this media of public relations. However, we have had many letters and oral compliments from both residential and business users. Also, it has been demonstrated to us during requested rate increase proceedings that those exchanges serviced by 'Miss Telephone Service' seldom have service complaints. Subscribers, on a whole, are willing to accept the requested rate increase due to improved quality of service and this human contact they have had with the company. . . .

"Specifically considering the actual dollar savings with 'Miss Telephone Service,' we have available figures that reveal that in the first full year of operation this project saved us approximately $10,000 in the instrument maintenance account . . . Linked to this savings is the improved quality of service rendered to the subscribers. A trouble free instrument is a necessity for good service . . . Experience has proven her worth. Operating companies, both small and large, can, through some type of a 'Miss Telephone Service,' create better public relations in their communities. They can provide an improved quality of service, through preventative maintenance, at a lower cost. To you — we recommend 'Miss Telephone Service'."

A Vibrant Part of U.S. Economy

(*Continued from page* 67)

— The Senate Banking and Currency Committee has given approval to a bill, S. 1168, to regulate over-the-counter security transactions. The subject matter had been before the Committee for several years as a result of bills introduced by the Chairman, Senator Fulbright of Arkansas. As approved by the Committee and now awaiting action on the Senate calendar the measure is a bit watered down from the original proposal. The approved measure would apply only to unlisted companies with assets of at least $10 million and 1,000 stockholders. The earlier version would have applied to firms having assets of more than $2 million and either 750 or more stockholders or debt securities of more than $1 million.

If finally enacted this legislation would be of substantial interest to many Independent telephone companies selling their securities across state lines, inasmuch as it would subject them to about the same measure of S-E-C control that now applies to securities listed on the New York stock exchange. Our Association as such did not take any formal part in the hearings.

(I) Outlook for Tax Reduction: — Everyone would like to know when there will be a reduction in the corporate tax rate, now set at 52 per cent and extended by Congress for another year beyond April 1 last. But for the extension which was a foregone conclusion the rate would have dropped back to 47 per cent on that date. More and more from all forms of industrial enterprise we hear that such a high tax levy is an impediment to the raising of needed capital for plant expansion and creating job opportunities. We also hear that it is a deterrent to economical corporate operation when it is borne in mind that the government takes 52 cents out of every dollar and allows the corporation to retain only 48 cents.

We often wonder how long it will be before there is such a lessening of international tension and such a degree of retrenchment in government spending as to make tax reduction possible. It is disheartening to witness even such a conservative as Chairman Harry F. Byrd of the Senate Finance Committee saying, as he was quoted in the *U. S. News and World Report* several months ago, that tax reduction is out of the question in the foreseeable future.

It is also true that high personal income taxes likewise constitute a severe blow to individual incentive and the exercise of initiative, qualities which in the past have meant so much to the upbuilding of our country. It would be an unhappy thing for the next generation to receive as its heritage a confiscatory system of taxation and a centralized government in which the liberties of American people suffer so severely from the attrition of high tax levels.

But we must not be discouraged from exercising the political rights available to every American. Each citizen owes it to himself and his country to continue to fight for greater economy and greater efficiency in government as well as for elimination or drastic scaling down of some of our large public outlays. Without such economies certainly Senator Byrd will prove to be right.

If Congress can be inspired to have the will to bring down the cost of government so that some relief

from the tax burden may be made possible, taxes may be reduced in our time. Congress will have the will if the voters at the grass roots all over America demand it, not before.

As American citizens interested in sound government and in retrieving control over our individual earnings, we should do our part to convince members of Congress that significant retrenchment in governmental expenditures is long overdue.

This concludes my discussion of legislation. It will be seen that the legislative year while a fairly busy one was not an altogether bad one for telephone companies. On the other hand, it was not a particularly noteworthy one from the standpoint of the passage of measures deemed meritorious, such as the proposal to increase the securities exemption or the proposal to repeal the telephone excise taxes. The legislative process is usually slow, tedious, uncertain and impregnated with politics of varying shades.

Matters Before the Federal Communications Commission

INCREASINGLY we are having to interest ourselves in radio proceedings because of the growing importance of radio as an aid to telephone companies in carrying out their public service responsibilities and also because of the limited space in the radio spectrum and the scramble for frequencies by many conflicting groups.

Radio is becoming an almost indispensable tool in telephone operation. In the opinion of many people competent to judge, practically every telephone company in the United States will be using radio to some extent within the next ten years, or fail to keep abreast of service demands and the march of technology. The F-C-C commented upon the age of electronic marvels in its last annual report to Congress:

"This age of electronic marvels is advancing to an extent undreamed of a decade ago. By traveling with the speed of light, radio communication has shrunk both time and distance and has united places and people as never before. The convenience and efficiency of space transmission is opening new avenues to public and private service. And, at the same time, technical improvements are revolutionizing radio operations in general, whether it is telegraph, telephone or broadcast."

To assist us in effectively representing Independent company interests in radio proceedings and to keep in intimate touch with the developments in the radio art, our Executive Committee has authorized the addition to the Association's staff of a qualified radio engineer.

(A) The Big Microwave Case: — Perhaps the most important F-C-C current radio proceeding to telephone companies is Docket 11866 involving the allocation of microwave frequencies in bands above 890 Mc. Among the 19 separately stated issues are the following:

What are present and future demands for frequencies, common carrier and private?

What effect would point-to-point authorizations have on common carrier ability to serve?

Does any obligation rest on the Commission to protect common carrier service?

Would restriction of point-to-point private systems result in a lessening of competition or a fostering of monopoly in the manufacture, use or provision of facilities, contrary to the public interest?

To what extent will "contemplated" private point-to-point communication depend upon interconnection with common carrier facilities?

Are common carriers required to establish physical connections with private point-to-point carriers? If not, should the Commission request jurisdiction over this subject from Congress?

It will be seen that the issues are far reaching and go to the very fundamentals of common carrier rights and obligations and to the public policy which should prevail.

With many interests demanding opportunity to present their viewpoint, hearings in this proceeding began last May, were recessed for the summer and will resume in the fall. Our Association presented five witnesses in the early part of the hearings:

Donald C. Power, President of our Association and President of General Telephone Corp.

C. H. McLean, Chairman of U-S-I-T-A's Engineering Subcommittee on Radio and Carrier.

Paul H. Henson, Chief Engineer, Lincoln (Neb.) Telephone & Telegraph Co.

Marcus L. Donaldson, Chief Engineer, Peninsular Telephone Co., Tampa, Fla.

U-S-I-T-A's Secretary George C. Richert, who read a statement by Colonel Wm. C. Henry, President and General Manager of Northern Ohio Telephone Co., Bellevue, Ohio.

The Bell System was of course well represented and likewise presented witnesses.

Our witnesses and those of the Bell System emphasized the constantly increasing need for radio frequencies in telephone operations in order to meet the demands for inter-exchange, inter-office, public mobile, point-to-point rural, and subscriber private line systems communications channels.

They stressed the public service nature of our business and the belief that maximum conservation of the radio spectrum will come not from allocating frequencies to large numbers of private users but from assigning them to telephone companies so that a communications service may be made available to the public generally at just and reasonable rates, under nondiscriminatory conditions and subject to public regulation by federal and state authority.

Emphasis was also given to the adverse effect upon the public and upon telephone common carriers themselves that would flow from assignment of frequencies to private users and a consequent skimming of traffic cream. The remaining traffic, it was pointed out, would have to bear higher rates in order to cushion the impact of revenue losses.

Many private point-to-point communications entities such as gas, pipe line and electric companies have entered the field in a number of places and undertaken to provide their own intra-company communication serv-

ice with frequencies obtained from the FCC commission for the purpose.

(B) The Lease-Maintenance Case: — Is the public offering by telephone companies of private mobile communication systems furnished on a lease-maintenance basis subject to regulation under the ordinary regulatory statute? The California Commission answered in the affirmative in a decision last January in a case involving tariffs covering such a proposed service filed by the Pacific Tel. & Tel. Co.

A similar question was presented to the F-C-C in March of this year when tariffs covering the same kind of an offering on an interstate basis were filed by the Bell System. In a formal proceeding instituted for the purpose the Commission suspended the tarrifs pending a hearing as to their lawfulness and as to whether the contemplated arrangements constitute a common carrier service subject to its jurisdiction under the Communications Act.

As it is believed that some Independent telephone companies may now be furnishing service of this nature and that others may wish to do so in the future, our Association has intervened in the proceeding in support of the acceptability of the tariffs as a common carrier offering. If telephone companies do not offer such a service there may be an added inducement to certain businesses to set up their own private communication systems.

(C) Interest of Department of Justice in Microwave and Lease-Maintenance Cases: — Before the hearings began in the microwave case and after the Bell System filed its interstate lease-maintenance tariffs, the Department of Justice decided to advise the F-C-C of its views. In two letters to the Chairman of the Commission, Assistant Attorney General Victor R. Hansen in charge of the Antitrust Division attempted to raise certain monopoly and antitrust issues.

Respecting microwave assignments in Docket 11866 Mr. Hansen in one of his letters expressed the opinion

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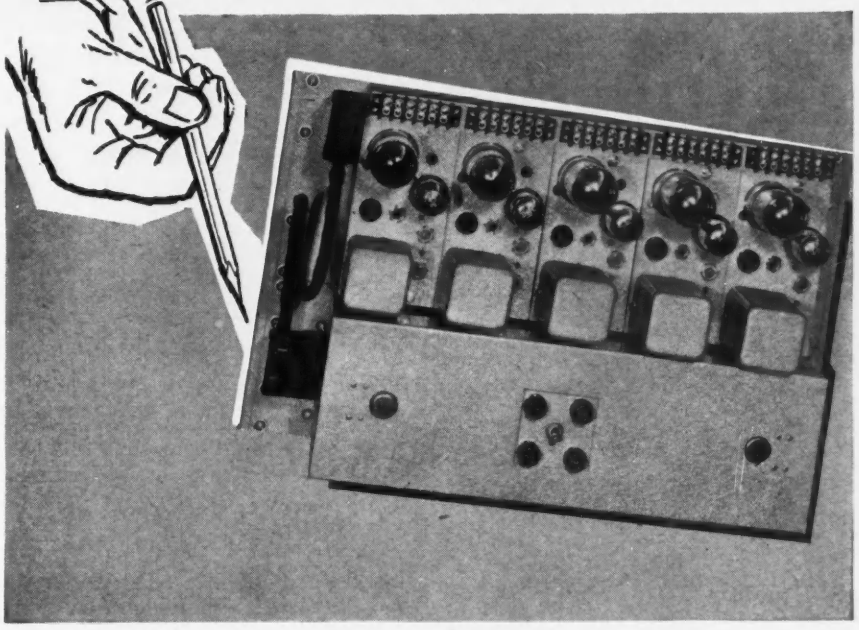

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that Section 314 of the Communications Act shows a congressional intent to rely upon competition to regulate and develop the communications field to the greatest possible extent, and that there is nothing in the Act to indicate that any particular portion of the spectrum should be turned over to common carriers.

In the lease-maintenance case Mr. Hansen in his other letter referred to the consent decree in the American Telephone and Telegraph Company and Western Electric antitrust case and stated that the decree sought to limit the AT&T and its operating subsidiaries to common carrier communication services.

He stated that approval of the proposed tariffs "might substantially lessen the competition which now exists in the leasing, as well as in the manufacture and sale, of equipment for use in private communication systems." He also stated that in the event of approval the Antitrust Division "would be forced to consider most seriously appropriate action under the AT&T judgment."

There is apparently a view within the Antitrust Division that private point-to-point communication systems constitute a new industry and should be given an opportunity to grow and develop. In intervening in the lease-maintenance case our Association of course is not directly concerned with the question whether the before-mentioned consent decree would be violated in any way. But it is interested in the principle of protecting the right of common carrier telephone companies to provide a comprehensive communication service for all who desire it, at proper rates and subject to public regulation.

(D) Other F-C-C Radio Proceedings: — The following is a summary of other radio proceedings pending before the F-C-C in which our Association is taking an interest:

(1) Our Association filed comments in Docket 11990 in opposition to a proposal to establish a new Local Government Radio Service with eligibility for states, cities, towns, territories, possessions and other governmental subdivisions to transmit by radio all types of essential administrative and emergency messages.

(2) Our Association filed comments in Docket 11991 in support of a proposal to allocate five pairs of frequencies in the 450-460 Mc band in a new Utilities Radio Service for use by telephone companies to serve their own construction and maintenance vehicles. Telephone companies may now use frequencies for this purpose only when they are willing at the same time to incur the added expense of making a public offering of Mobile Radio Service and have demonstrated they have made reasonable effort to develop a need for it in their territory.

In September 1956 the Commision in Docket 11435 amended its rules governing operations in the Power Radio Service to provide three pairs of frequencies in the 450-460 Mc band for use by telephone companies on a shared basis for construction and maintenance purposes. The following month the Commission stayed the effective date of the order.

Our Association in December filed a petition to vacate the stay order. While stating it recognized the ". . . inherent need of the telephone industry for a number of exclusive channels," the Commission decided to terminate the proceeding. Later, however, in still another proceeding, Docket 11991, the Commission proposed to allocate five pairs of frequencies for use by Independent telephone companies for construction and maintenance purposes.

Also, in Docket 11991 we opposed a proposal to establish a new business Radio Service to permit business firms to establish radio systems to meet their own communication needs. This was on the ground that Independent telephone companies would be deprived of needed revenues and that their ability to improve and expand their service to the general public would be impaired.

(3) Our Association filed comments in Docket 11995 in support of a proposal to allocate on an exclusive or primary basis additional frequencies below 890 Mc for use by telephone companies to provide Mobile Radio Service, rural subscriber,

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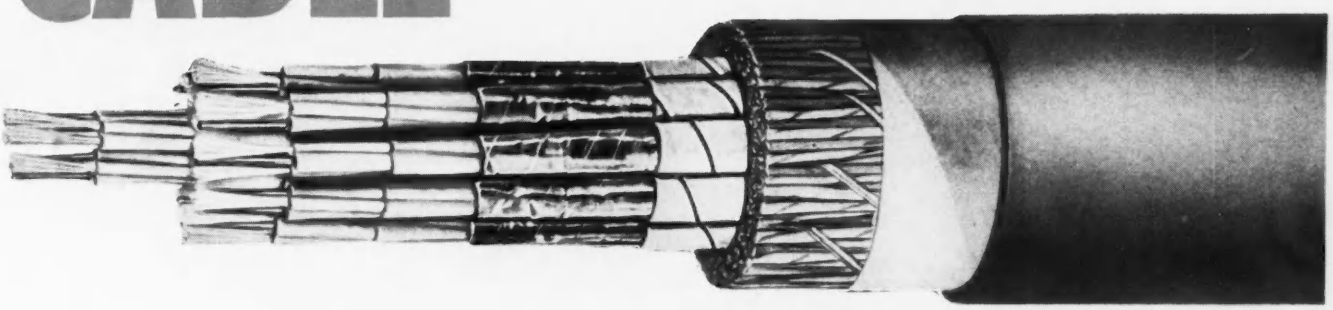

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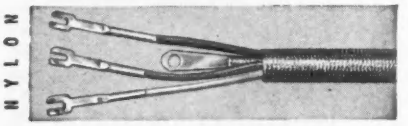

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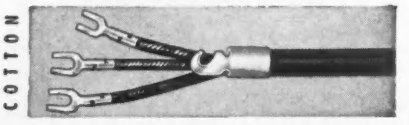

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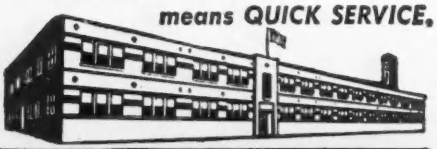

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(*Continued from page* 96)

and interexchange point-to-point facilities.

(4) Our Association is preparing comments in response to a Commission Order of Inquiry in Docket 11997. This inquiry contemplates a review of the present allocation of frequencies between 25 Mc and 890 Mc in the light of technical progress. The review is intended to enable the Commission to: (1) determine whether more efficient use can be made of this part of the spectrum; (2) evaluate the long range requirements of existing and potential users of this portion of the spectrum; (3) evaluate what system or systems of frequency allocation for the future would best serve the public interest; and (4) evaluate the feasibility of making long range plans for the future use of the radio spectrum and in particular determine the impact upon users of the spectrum and the general public by ordering such future changes as may appear desirable.

In view of the importance of frequencies in this band to telephone companies for use in providing Mobile Radio Service, facilities for rural subscriber, interexchange and interoffice use, and for microwave systems our Association will take full advantage of this opportunity to draw attention to our need for additional frequencies.

(E) Accounting Matters before the F-C-C: — During the past 12 months we gave attention to certain accounting matters before the F-C-C including the following:

(1) In response to a Notice of Proposed Rule Making adopted last January in Docket 11913 our Association filed with the Commission comments in support of a petition by General Telephone Corporation that the Commission's Uniform System of Accounts for Class A and Class B companies should be revised to reflect the principle of deferred tax accounting. Under the proposal appropriate changes would be made in the Commission's accounting rules to permit deferral of income tax liability when election is made under the provisions

Please turn to page 102

1883 1957

Connollys FOR Cable

"three-quarters of a century of telecommunications leadership"

Connollys Ltd., the most honored international brand name in cable manufacture, now offers Connollys' cables to U.S.A. purchasers for domestic and overseas installations. Connollys' Blackley works in Manchester, England, combines modern Atomic Age methods with the loftiest British tradition to produce cable to the most exacting specifications. Connollys installations encircle the world . . . have been standard with the British Post Office and other world wide telephone administrations for half a century.

TELECOMMUNICATION CABLES
Thermoplastic

Polythene Insulated and Polythene sheathed (Armored if necessary).
Polythene Insulated and P.V.C. Sheathed (Armored if necessary).
P.V.C. Insulated and P.V.C. Sheathed Telephone Cables (Armored if necessary).
P.V.C. Insulated, Silk Covered and Lacquered P.V.C. Sheathed Switchboard Cables.
P.V.C. Insulated, Silk Covered and Lacquered and Cotton Braided, Flameproofed Switchboard Cables.
P.V.C. Insulated and Cotton Braided Wires.
P.V.C. Insulation with Nylon Sheath.

TELECOMMUNICATION CABLES
Lead Covered

Air Spaced Dry Core, Paper Insulated, Twin, Unit or Quad Construction, 1 pair to 1,800 pairs.
Enamel, Silk and Wool, Quad, 8 pairs to 202 pairs.
Enamel, Silk and Wool, Twin, 7 pairs to 200 pairs.
Enamel, Silk and Cotton.
Enamel, Cotton, Twin, Internal Wiring, 1 pair to 100 pairs.

PLASTIC FLEXIBLES

Conductors of H. C. Copper Wire, Plain or Tinned.
14/.0076", 23/.0076", etc. — P.V.C. Insulated, Single Core, Twin Flat, Twin Twist, Twin Fig. '8' etc.

POWER CABLES

Paper Insulated, Lead Covered Power and High Voltage Cables to latest B.S. and Customer's Specifications.
P.V.C. Overhead Conductors.
Combined Pilot and Signaling Cables to Customer's Specifications with Paper or Plastic Insulation.

MAGNET AND WINDING WIRES

Various types from 50 AWG.
Also Bunched and Litz types.

ADHESIVE ELECTRICAL INSULATING TAPES AND PAPER STRING.

Black. "Blackley."

For complete listings and competitive price quotations, write:

BARKER SALES COMPANY
956-8 Edgewater Avenue Ridgefield, N. J. U.S.A.
Exclusive U.S. Agents for Connollys (Blackley) Ltd.

Mutual has the complete line of LP-Gas furnaces and torches for the Telephone Industry!

MELTING FURNACES

CYLINDER MOUNTED FURNACE NO. 2

TELEPHONE MEN: For faster heating and melting use Mutual's Propane Furnace. Develops approx. 2350 degrees F. Melts 60 pounds of lead in 12 minutes. You get the job done better and quicker with fewer man hours. No pumping, priming or waiting. Won't blow out. Ideal for heavy-duty preheating and close melting when used with Mutual Torches. Blow torch and soldering irons can be attached to Propane tank hose. Interchangeable Furnace mounts either on cylinder or base—can be changed over in minutes. New Multiple Valve is now standard on all Mutual Cylinders.

BASE MOUNTED FURNACE NO. 2A

BLOW TORCHES

NO. 5 TORCH
Blast-Type Flame

Designed for preheating and melting, this rugged Propane torch will develop approximately 2400° F. Cast iron burner tube, special cool grip, and instant control of flame with wheel-type needle valve handle.

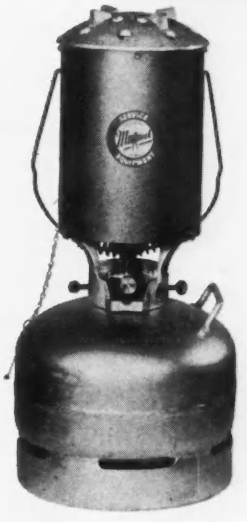
NO. 4 TORCH
Broad Flame

For sweating large copper pipe fittings, wiping joints, heating copper or brass pipe and fittings . Also for melting compounds from electrical construction equipment such as pot heads, junction boxes, etc.

NO. 4A TORCH
Pointed Flame

Flame is small and pointed and heat can be concentrated at spot where it is most needed. Ideal for lead burning, light brazing, soldering, light streamlined pipe work. Weight ¾ lb.

PORTABLE HEATER



Keep outside crews warm with portable PROPANE heat. Burns clean, no smoke or gas fumes; may be used in confined areas.

No pumping or priming required — just turn one valve for instant even heat.

Lightweight, portable, safe and easy to use. Develops 11,000 BTU. Cylinder-mounted Heater shown.

When mounted on Interchangeable Base, Heater is known as No .2A.

NO. 2 PORTABLE TENT HEATER

HAND TORCH

The Mutual B-91 Propane Torch is popular among linemen for fast emergency repairs. Easily hung from belt, if desired. Using Propane, this torch is ready for instant use. No pumping or priming, no waiting or sooting. Flame won't blow out. Easy and safe to light and control. Heats up to 2300° F. Over 4½ hrs. continuous use in each cylinder. Fill it yourself for approx. 10 cents — nothing to throw away. Cylinder meets ICC regulations. Illustrations show attachments available.

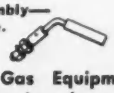
Attachments Include:

A. **491-B Tip Assembly**— Pointed Flame.

B. **491-S Tip Assembly**— Blast-Type Flame.

C. **491-S Tip Assembly**— High Speed Flame.

D. **491 Tip Assembly**— Broad Flame.



E. **45-A Spider Burner**

F. **No. 3 Soldering Iron.**

G. **Extension Hose**— Used with Tip Assemblies.

H. **71A Filler Adapter**

Mutual Liquid Gas Equipment is distributed to independent telephone companies by Automatic Electric Sales Corporation and Leich Sales Corporation.

Mutual LIQUID GAS EQUIPMENT CO., Inc.
17129 SOUTH BROADWAY, GARDENA, CALIFORNIA

"The Strange Case of the Cosmic Rays"

NEXT IN THE BELL SYSTEM TV SCIENCE SERIES

Here is one of the most fascinating scientific "detective stories" of our time—"The Strange Case of the Cosmic Rays." It's the third program in the Bell System's widely acclaimed TV Science Series, which previously has brought you the informative and entertaining "Our Mr. Sun" and "Hemo the Magnificent."

"The Strange Case of the Cosmic Rays" will be presented to a coast-to-coast network television audience from 9 to 10 P.M., E.D.T., Friday, October 25, on NBC-TV.

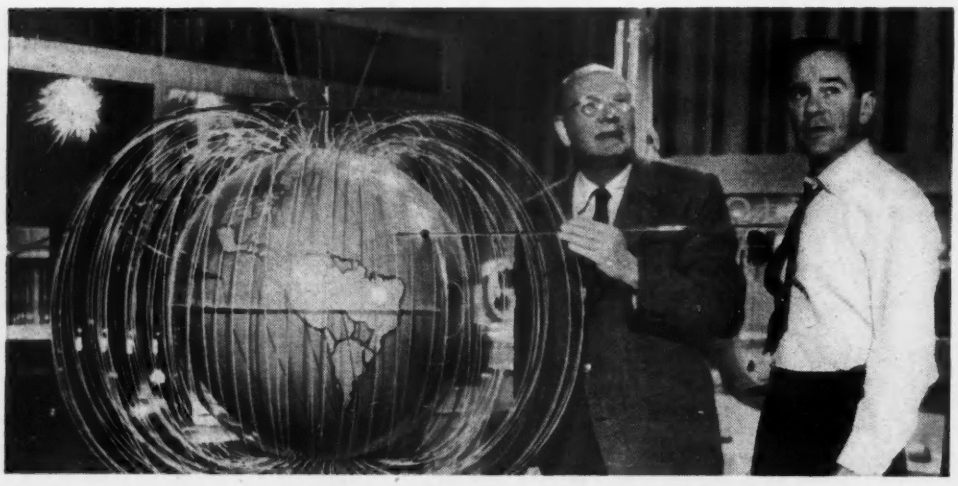
Produced and directed by Frank Capra, the program stars Richard Carlson and Dr. Frank Baxter. It tells the absorbing story of the work of scientists in tracking down the cosmic rays and establishing their character and behavior.

Mr. Capra uses actors, cartoon animation, science motion pictures and puppets. Some of the most famous pictures in the physical sciences will be shown on television for the first time in this program.

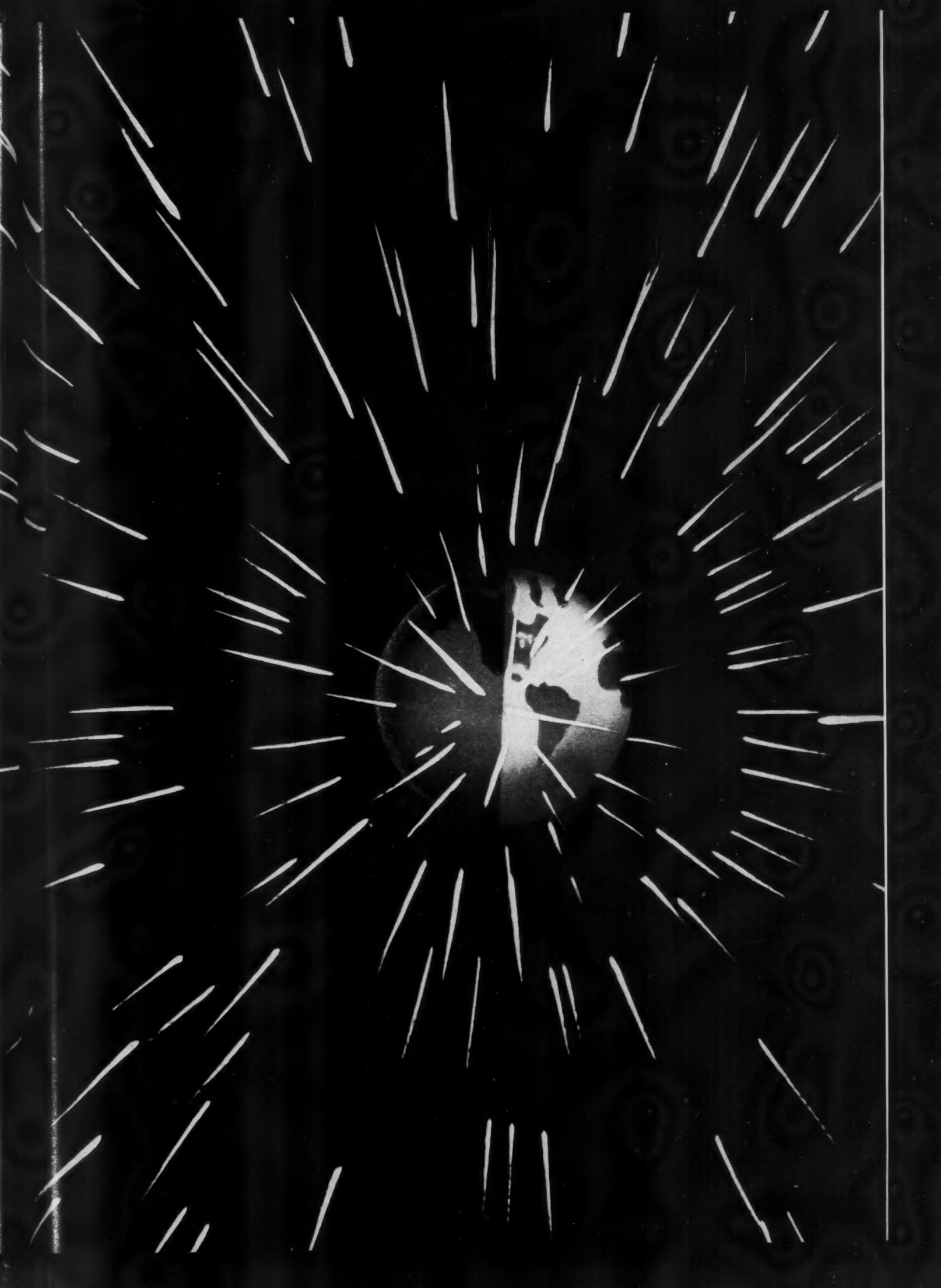
As a partner in the telephone industry, the Bell System is proud to sponsor the Science Series. We hope that by showing the drama and excitement of science we can, in a modest way, help it to flourish and do even more for people everywhere.

See this special science telecast in full color and black and white on the NBC-TV network, 9-10 P. M., E.D.T., Friday, October 25. Check local listing for time and station.

Working together to bring people together
BELL TELEPHONE SYSTEM



Dr. Frank Baxter (left) and Richard Carlson in a scene from "The Strange Case of the Cosmic Rays." Model of the earth and its magnetic field shows how cosmic rays are deflected as they hurtle in from outer space.

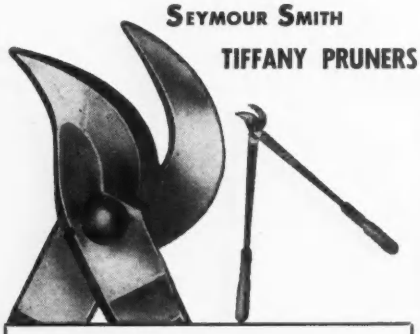


Illustrated above is No. 11 Tree Pruner with center cut action by tempered steel blade that easily handles 1" branches. Head is reinforced malleable iron. Spruce poles with telescoping aluminum joints. For heavier work No. 12-18, capacity 1½". Also Pole Saws.

for clearing brush...

SEYMOUR SMITH

TIFFANY PRUNERS



Hand forged throughout. Fast and easy double cut action with thin blades shaped to "draw in." Improved bolt and nut joint, through handle and riveted grip fastening.

FAST-CUTTING SAWS

Blades of Swedish charcoal steel. Large, deep teeth with heavy set to prevent binding. Hand and Pole models for all work up to chain sawing.

Quality Tools
SEYMOUR SMITH
Since 1850

Send for FREE literature
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Oakville, Conn.

(*Continued from page* 98)

of the Internal Revenue Code to use accelerated depreciation in the computation of federal and state income tax liability. Final action in this matter is being awaited.

(2) Last July we submitted comments in support of a proposal dealing with cradle-to-grave accounting for station apparatus, wire, small PBX's and TWX equipment. In an order adopted in September 1956 the Commission adopted the proposal with permission to companies to put the amendments into effect last January 1. Our Association is now preparing comments upon a proposal to amend F-C-C Annual Report Form M to reflect the revised method of accounting.

(F) The Hush-A-Phone Case — Foreign Attachments: — In November 1956 the United States Circuit Court of Appeals for the District of Columbia handed down a decision setting aside the determination of the F-C-C a year earlier that the hush-a-phone acoustical device interfered with telephone transmission. The Commission had sustained telephone company foreign attachment tariff provisions after hearings at which Bell and Independent Company witnesses testified in opposition to the use of the hush-a-phone. When the case was before the Court our Association counsel filed a brief and submitted oral argument in support of the Commission's ruling. In deciding the controversey the Court stated:

"To say that a telephone subscriber may produce the result in question (privacy) by cupping his hand and speaking into it, but may not do so by using a device which leaves his hand free to write or do whatever else he wishes, is neither just nor reasonable. The intervenors' (telephone companies) tariffs, under the Commission's decision, are an unwarranted interference with the telephone subscriber's right reasonably to use his telephone in ways which are privately beneficial without being publicly detrimental."

In February the Commission ordered the defendant telephone companies to file amended tariff schedules rescinding and cancelling any tariff

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HOW TO TEACH SHUT-IN STUDENTS BY TELEPHONE

This new 16 page Handbook, compiled by a committee of prominent educators, has separate sections for teachers, administrators, physicians and parents. It contains helpful information to assure the effective use of the School-to-Home service for thousands of homebound and hospitalized students and serves as an effective sales aid.

SCHOOL-TO-HOME SERVICE can help you build community good-will and earn extra revenues for your company.

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Buster, to you it's just some initials . . . but to the people who use 'em it means quality. You see, T-C stands for Taylor-Colquitt Company who for 30 years now have built a reputation for careful timber selection, constant improvement through research, controlled preservative treatment and higher standards of quality. Yes sir, Buster, to us this T-C means a quality pole . . . one that will give long years of trouble free service.

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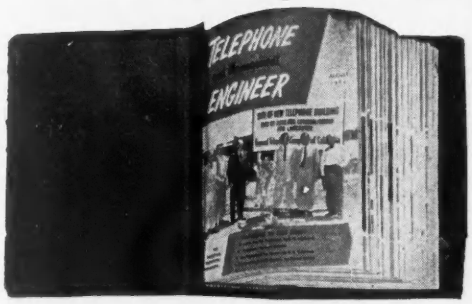
Now you can preserve and protect your

TELEPHONE ENGINEER MAGAZINES

with this sturdy, full-sized BINDER



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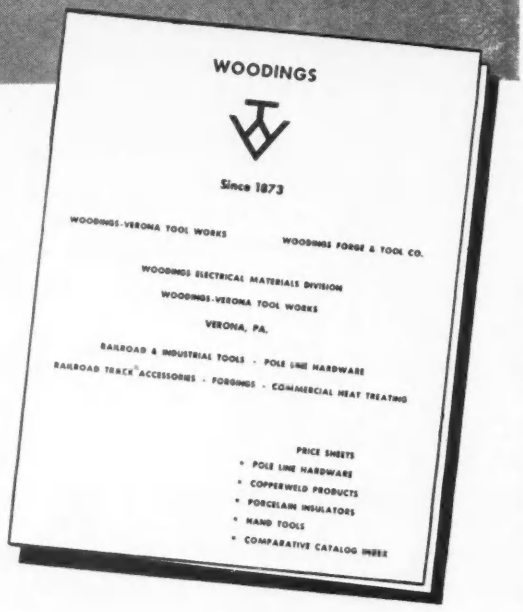
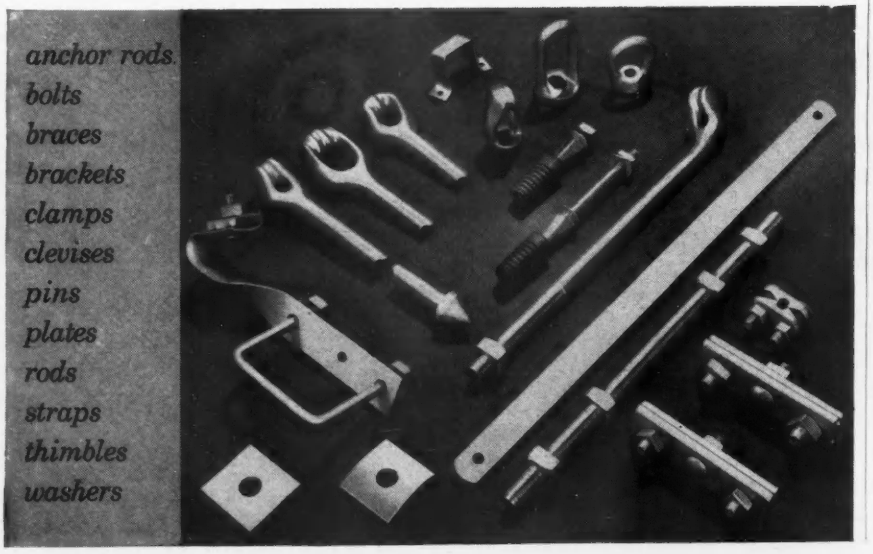


a new single source of supply... saves **TIME** *and* **MONEY**

Descriptive data on Pole Line Hardware, Porcelain Insulators, and Hand Tools are given in this new catalog along with ordering information and prices on available types and sizes. It shows how Woodings-Verona provides you with a dependable source of supply for all your pole line hardware needs. The catalog pages are loose-leaf to assure a handy, up-to-date desk reference for planning pole line construction and maintenance. Write for your personal copy *today!*

Electrical Materials Division

Woodings-Verona Tool Works • Verona, Pa.



regulations "to the extent that they prohibit a customer from using . . . the Hush-A-Phone device or any other device which does not injure defendants' employes, facilities, or the public in its use of defendants' services, or impair the operation of the telephone system." The FCC said:

"*As we construe the Court's opinion, a tariff regulation which amounts to a blanket prohibition upon the customer's use of any and all devices without discriminating between the harmful and harmless encroaches upon the right of the user to make reasonable use of the facilities furnished by the defendants. Such a regulation goes beyond what is reasonably required in the interest of protecting the defendant's employes, facilities, the telephone system and the public from adverse effects.*"

The tariffs were filed as directed after conferences between the Commission's staff and representatives of the Bell System, our Association and Hush-A-Phone counsel respecting the matter of form. It is my understanding that the Bell companies have made or are planning to make comparable filings with the state regulatory authorities.

In view of the apparent breadth of the Court's decision there is no easy solution to the general foreign attachment evil. But telephone companies in every way lawfully open to them should continue to discourage each and every foreign attachment deemed injurious to normal and accepted quality of service.

Internal Revenue Service

IN GIVING an accounting of the Association's stewardship during the past year reference should be made to a notice by the Internal Revenue Service in June that a study of the schedule of useful lives of depreciable property would be undertaken.

In accepting an invitation for comments our Association suggested that the classes of property be revised to conform with the provisions of the Uniform System of Accounts prescribed by the F-C-C, thus giving recognition to depreciation account-

Please turn to page 108

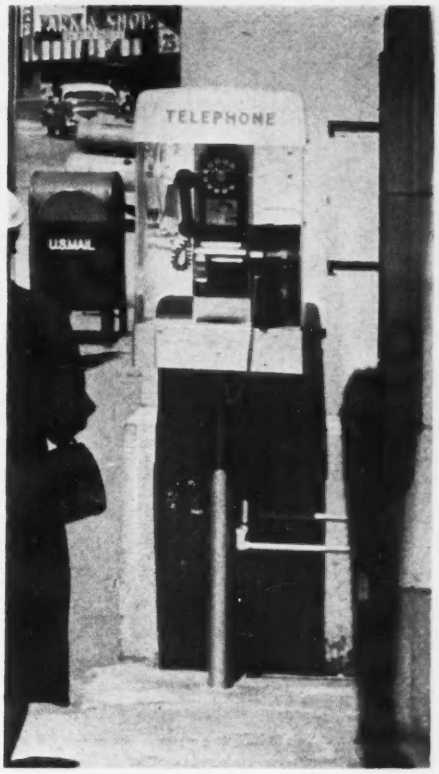
THE NATION'S FIRST DUAL BOOTHETTE DRIVE-IN INSTALLATION

The Gladwin B-O-O-T-H-E-T-T-E*

was engineered by and to meet the requirements of several of the world's largest operating telephone companies. It provides the required weather protection for the instrument and other equipment. It meets the demand for reduced capital investment in coin telephone equipment. It provides the advanced design demanded by today's coin telephone customers.

*Patent Pending

TELEPHONE or WRITE for the BOOTHETTE brochure. Complete detailed drawings and servicing procedures are available.



The BOOTHETTE is an attractive proven service that invites walk-up usage anywhere, day or night.

GLADWIN PLASTICS, Inc.

165 Courtland St., N. E. **Atlanta, Ga.** **Phone JAckson 5-5384**

NOW YOU CAN "*BUZZ THRU*" WET CABLE SECTIONS AND TEST FROM FIELD OR OFFICE ENDS WITH A . . . .

MURPHY BUZZER RELAY SET (BR-1)

To increase the usefulness of the famous Murphy Cable Tester, the new Buzzer Relay Set gives you a dependable, economical way of "buzzing thru" wet cable sections over a greater resistance without having to add too many batteries.

The BR-1 will buzz thru a loop resistance of 0 to 1000 ohms. Only one 4½ volt battery is used in the set and it is enclosed in a cabinet with a special "balanced armature" relay. Dimensions of the Murphy Buzzer Relay Set are 3½ x 6 x 3 inches. It is shipped complete with a pair of water proof cords for connecting to the Murphy Cable Tester, and a heavy duty 4½ volt battery.

Write for prices and additional information.

Order your new Model VC Test Cords for use with Murphy Cable Tester. Made of high quality, extremely flexible, test wire, they're insulation tested at 20,000 volts . . . assure no "leakage" readings.

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4419 Tulsa **Houston 24, Texas**

construction and maintenance DIGEST

- Positive grip
- A lasting wire
- New and phenolic
- On the inside
- 25-year battery
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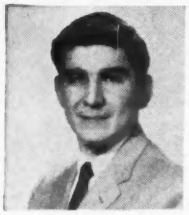
- 5-in-1 protection
- 3 ways better
- Water-shed

Published regularly to help you get the most out of your materials and supplies dollar

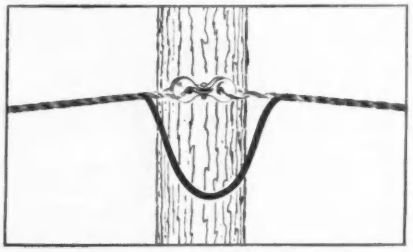


by Frank R. Kasper, Inside Sales—Atlanta

At our house, we have a dynamo of atomic automation—she's just under 2 years old and keeping up with her is a big job—but fun. It's just the same keeping up with your needs for supplies: big job—but fun. It's satisfying work to know the parts and equipment I send you—are finest in the world. Why am I so sure they're best? Because they come to you with a double guarantee—the maker's . . . and Stromberg-Carlson's. And along with the protection you get from Stromberg-Carlson's 62-year reputation—you get the promise of new and better telephone equipment from the research program your orders help support. Thanks for the mighty fine business you've given us—we sincerely appreciate it!

Pressure is widely distributed

To provide an even, positive grip, Preformed Dead-Ends for Self-Supporting Plastic Cable are designed so that low radial pressure is distributed over a large area.



Available for 6, 11, 16 and 26 pair 19 AWG Self-Supporting Cable.

You have no high stress points to worry about, and no sharp bends in the cable are required. PLP Dead-Ends hold the full-rated strength of the Self-Supporting Cable and will not damage the outer covering or internal members.

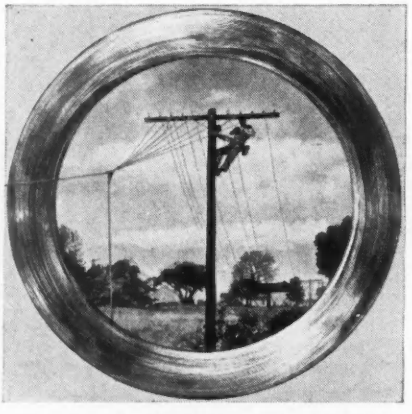
You can easily apply these Dead-Ends by hand, without tools. Simply insert one leg through a standard hardware thimble clevis and wrap the legs around the cable.

Preformed Dead-Ends are specifically designed for safe use with plastic-covered multiple cable.

This top performer brings you low-budget operation

If you'd like to reduce the cost of installing and maintaining telephone lines, may we suggest a rugged wire that staunchly defies wind, ice, and snow?

Copperweld Telephone Line Wire is known as a faithful friend, having wonderful transmission qualities and long, rust-resisting life. It lasts and lasts and lasts—saves you maintenance or replacement costs.



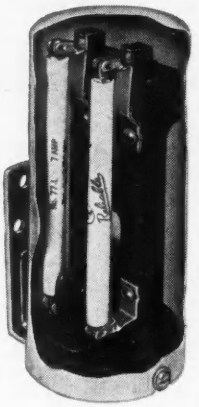
Copperweld Line Wire "talks better," and cuts your maintenance costs.

For short subscriber loops and secondary toll lines, we recommend .080"-30 E.H.S. and for toll lines and long subscriber loops, .104"-40 H.S.

Order Copperweld from your Stromberg-Carlson representative.

New Design Station Protector

For a station protector with really new features, specify the Reliable Series 2000 Protector.



All metal parts are bronze, aluminum or stainless steel.

This new protector replaces the Series 1000—and only the time-proved Reliable Discharge Blocks and Fuses remain unchanged. Quality and performance are better than ever.

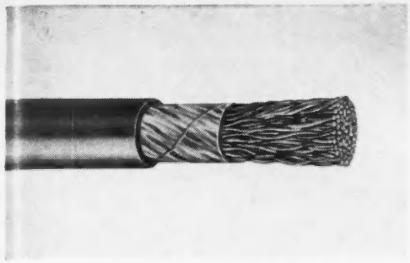
The new protector comes with a phenolic fuse mount (rather than porcelain); a flexible neoprene base with integral wire entrance sealing slots (instead of open wire holes); and a redesigned fuse mount and terminal post that permit putting wiring snugly in place without removing fuses. The fuse mount can be easily reversed to wire from right or left.

All the metal parts of this new protector are made of bronze, aluminum or stainless steel.

Long life . . . low cost

To meet your needs for inside wiring cable, Whitney Blake Company offers Inside "Telecable"—multiconductor paired—with semi-rigid insulation—brown or ivory Plastite jacket. Available in 24 A.W.G. soft bare copper conductors up to 76 pairs and 22 A.W.G. up to 51 pairs.

This inside wiring cable gives long service life because: it is water-resistant; has high resistance to crushing; is unaffected by humidity. The semi-rigid Plastite insulation has far greater compression strength than regular polyvinyl chloride compounds. The resulting long life of the cable means much lower maintenance costs.



Semi-rigid Plastite insulation

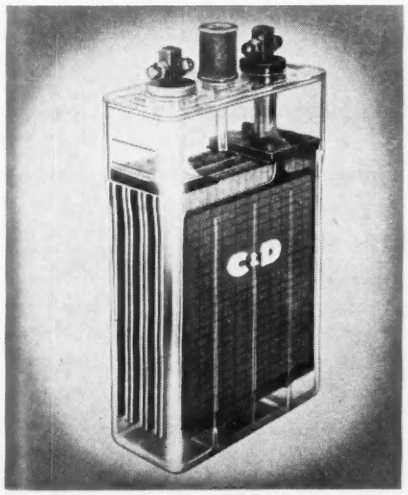
Inside "Telecable" is light in weight and easy to install. To terminate conductors, simply strip insulation and then solder.

The insulation is permanently colored for lasting polarity identification.

For economy *plus* protection, order from your Stromberg-Carlson representative.

Battery will live 25 years

A quarter of a century is the expectancy of an extra-life battery made by C & D Batteries, Inc. In full-float service, their PlastiCal (lead calcium grids) battery will serve your power needs faithfully –often well beyond its 25-year expectancy.



It'll be 1982 before you even have to *think* about replacing this extra-life C & D battery, if you install it now!

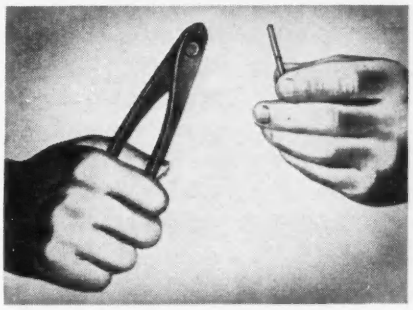
C & D Batteries' PlastiCell (high tensile, special alloy grids) battery offers reliable power supply at lower cost, with a life expectancy of 14 years.

You can get both of these C & D extra-life batteries from Stromberg-Carlson.

Splice it fast . . .
and it *stays* fast

Here's how to make a quick splice that holds fast, even under the most intense vibration. In fact, your splice will outlast the conductor!

You need two items; a Nicopress sleeve, and the Nicopress tool that is designed especially for use with these sleeves. You simply butt the



This Nicopress 17-2 tool plus this Nicopress sleeve make better pair splices, faster.

bared wire ends together inside the sleeve, and you've got a joint that won't ever pull out! Quick and easy.

The alloy lining inside the sleeve is harder than either the conductor or the sleeve, and forms a joint that is stronger than the rated breaking strength of the wire itself. **And** it has a high, lasting conductivity.

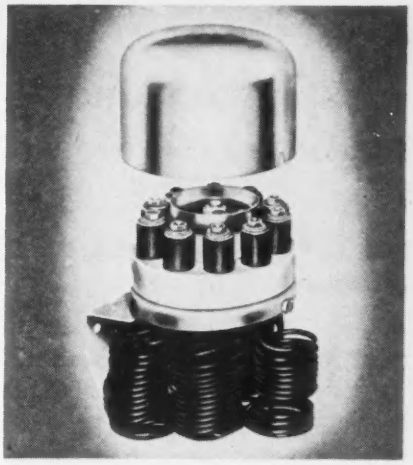
Also—joints made with Nicopress sleeves are small and neat, so they may be applied on inside wires as well as outdoor lines.

Your Stromberg-Carlson representative can offer prompt delivery on your order.

Protects 5 circuits at low cost

You get low-cost protection for 5 circuits with Cook Electric Company's Hy-Cap Power-Cross Protector—a single compact unit with only one ground wire.

In the assembly of this unit 10 carbon electrodes are fixed to a porcelain base which has a snug-fitting, weatherproof aluminum cover. Each electrode has a fusible element which forms a direct path to ground when an extended discharge occurs. Ten insulated copper wire leads are factory-connected to the protector and cut to correct lengths for installation on a 10B crossarm. Wire entrances are sealed with rubber grommets. A steel bracket makes mounting easy.



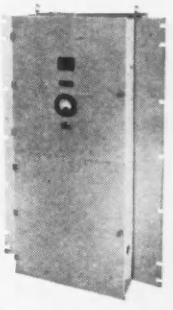
Protect 5 circuits with this one compact unit.

If all 5 wire leads are not needed at installation time, you can leave the extra wires coiled until facilities are increased.

In addition to serving as a heavy-duty arrester on communication circuits, this protector also guards against lightning damage.

Raytheon Rectichargers® Battery Chargers—Complete Line 3-400 Amperes

Entirely redesigned new Raytheon Rectichargers offer three major improvements:



New Raytheon battery chargers feature ± 1% no-load to full-load regulation

1. ±1% no-load to full-load stabilization prevents battery overcharging, minimizes gassing, lengthens battery life.

2. No audible hum at output terminals.

3. Most compact units on the market—wall or rack mounted.

Automatically compensated for rectifier aging, Rectichargers offer high efficiency, completely automatic regulation. No moving parts and self-protecting circuitry assure minimum maintenance, long life. Single and three phase, 3-400 amps.

Built by Raytheon, supplied to you by your Stromberg-Carlson representative.

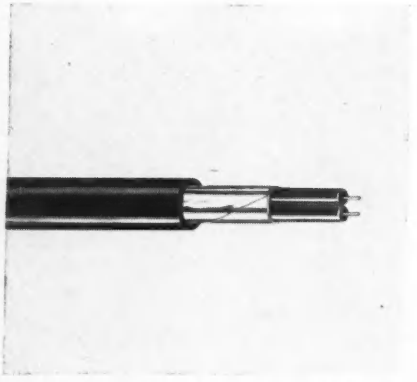
(*Continued on Page* 108)

(*Continued from Page* 107)

construction and maintenance digest

B. U. G. Cable—Outstanding Resistance

For outstanding resistance to moisture, acids, oils and chemicals, specify Ansonia Wire & Cable Company's B. U. G. wire, designed specifically for direct earth burial.



Specifically designed for direct earth burial

This wire features two 16 gauge conductors insulated in parallel with polyethylene, shielded with .004″ aluminum tape and covered with a tough, waterproof plasticized polyvinyl chloride jacket.

Your Stromberg-Carlson representative is ready to supply them to you.

Did you know . . . that Stromberg-Carlson warehouses and handles thousands of items in the field of construction and maintenance supplies alone? You can do *all* your business "under one roof" and find the same quality and reliability in every item.

Distributed by

STROMBERG-CARLSON

A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco

ing for property classified as "station connection" both for income tax purposes and regulatory accounting requirements. We entertain the hope the Internal Revenue Service will see its way clear to adopt this suggestion.

Toll Compensation Activities

THE VITAL stake which Independent companies have in toll compensation relationships with the Bell System is apparent when it is borne in mind that whereas in 1935 the compensation accruing to our companies on business interchanged with Bell companies was only $12 million, the amount in 1957 will be about $163 million. In addition to increases negotiated in earlier years, an increase of $18 million was negotiated in 1953 and an increase of $11 million in 1956. With wage and other operating expenses and the cost of equipment constantly on the increase there is a widespread feeling that many Independent companies continue to be inadequately compensated.

Last month our Toll Compensation Committee entered into further negotiations with Bell System representatives looking toward obtaining recognition of these economic changes. In the meantime any Independent company is entirely at liberty to make cost studies and conduct its own negotiations with the appropriate Bell associated company on the basis of facts in its individual case.

To assist our Committee in dealing with toll relationships with the Bell System our Association in 1956 employed Mr. Mervin Alexander and gave him the title of Toll Engineer. Mr. Alexander cannot undertake to make cost studies for individual companies inasmuch as he must devote his entire energies to the broad subject of toll problems generally. But he is always willing to respond to injuries or requests for information from individual companies and state association secretaries.

Here are some of the activities in which Mr. Alexander is presently engaged:

(1) Making a factual compilation of toll settlements for the years 1955 and 1956 in the interest of determining trends in the various classifications of toll traffic such as revenues, costs, volume, etc.

(2) Compiling a manual for line haul cost study procedures.

(3) Assisting a task force of the NARUC-FCC in developing a revised Separations Manual.

(4) Completing a statistical review of the entire Independent industry to determine the present status of private line service furnished by Independent telephone companies.

The survey of toll settlements for comparison of the years 1955 and 1956 will be helpful in gauging the effect of settlements between individual Independent companies and Bell System companies and in establishing a basis for future surveys. Statistics determined for each state will be placed in the hands of the state association secretary to enable him to analyze his state's operating and settlement trends.

(A) Revision of NARUC-FCC Separations Manual: — A revision of the NARUC-FCC Telephone Separations Manual will probably be approved by the N-A-R-U-C at its convention in Memphis the latter part of this month.

Revision was called for by resolution of the regulatory commissioners at their 1956 convention. The task force created to handle this difficult and complex assignment was composed of representatives of the N-A-R-U-C, the F-C-C, the Bell System and our Association.

Our representatives were our Toll Engineer, Mr. Alexander, and Mr. Richard Ohlson, a member of the Subcommittee on Message Toll Compensation. The task force was charged with the duty of revising the Separations Manual to incorporate the Charleston Plan, the Modified Phoenix Plan, and changes in the Uniform System of Accounts, and to recognize changes in telephone plant and equipment and operating practices that have occurred since the Manual was written in 1947.

Meetings of the task force began in March of this year and were held almost continuously for a period of five months. Our representatives stressed the need for incorporating in the new volume recognition of the operating characteristics of the Inde-

pendent segment of the industry and the desirability of developing a Manual applicable to both branches of the industry.

On a matter so intricate and with such opportunity for differences of opinion between federal and state commissions, between the two branches of the industry and between them and the respective regulatory authorities, it is unlikely that any one group will find complete reflection of its views in the Manual finally approved. Necessarily there had to be much give and take in the long conferences leading to its preparation.

Government Competition With Private Business

GETTING THE government out of competition with private business is a subject that has vexed many persons in private industry and some people in government. Several bills have been introduced in Congress, at least one committee has conducted hearings on the problem, and the Bureau of the Budget and the Secretary of Defense have issued directives undertaking to establish administrative policy.

The seriousness of the over-all problem and its threat to free enterprise may be more readily understood when it is borne in mind that the federal government, outside of the Defense Department, owns and operates commercial and industrial type facilities which have an aggregate value equal to the combined assets of General Motors and U. S. Steel. If the value of the Defense Department's similar facilities, 2,500 in number, were included, the aggregate figure, according to the Hoover Commission and the Senate Select Committee on Small Business, would be equal to the combined capital investment of General Motors, Standard Oil of New Jersey, U. S. Steel and Dupont.

This is a startling and arresting commentary on the way certain parts of our government have been run. Some of the facilities consist of communication equipment used at military installations notwithstanding the availability of service from commercial telephone companies. *Next page*

Now!

a simple multiplying 10-key listing machine

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6 new features make figuring easier...

NEW Multiplication Key – electric short cut multiplication . . . even prints both factors and answer on two easy-to-read lines.

NEW High Speed – 220 cycles per minute. Over 30% faster than most other 10-key listing machines.

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Plus these wanted features – Exclusive Automatic Visi-Balance Window – Single Cycle Keys – Portability – Two Color Printing – Quiet Rotary Action – Streamlined Styling – Concealed Paper Roll.

COMPTOGRAPH "220M"

figures faster than you think

Add up the features: You'll know why there's greater speed and accuracy – lower-cost operation – with Comptometer Comptograph "220M." It's the world's finest all-electric 10-key listing machine. Prove it on your own work. FREE. Mail Coupon today.

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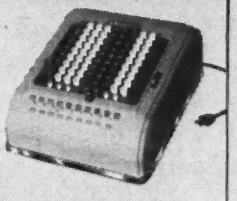

New Comptometer Customatic – World's fastest way to figure . . . now faster than ever. Try it FREE on your own work. See for yourself.

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While much yet remains to be done to relax the bureaucratic grip on private and commercial ventures carried on by government, at least two steps have so far been taken that should prove helpful. One of these was the issuance by the Bureau of the Budget in January 1955 of a bulletin setting forth the policy of the administration. It reads:

"It is the general policy of the administration that the Federal Government will not start or carry on any commercial activity to provide a service or product for its own use if such product or service can be procured from private enterprise through ordinary business channels. Exceptions to this policy shall be made by the head of an agency only where it is clearly demonstrated in each case that it is not in the public interest to procure such product or service from private enterprise."

When testifying before the foregoing Senate Select Committee earlier this year, Budget Bureau Director Percival F. Brundage said:

"The decision to continue or discontinue an activity as being in the public interest should not depend primarily upon whether the product or service can be produced cheaper by the Government. As a general guide our policy is that apparent cost or savings should not be a deciding factor where adequate competition exists. This policy was adopted for the following reasons:

"1. *The costs of Government operations are not comparable with corresponding business costs. The Government, for example, pays no income taxes and operates its own tax-free facilities, thereby keeping costs down.*

"2. *Government accounts are not kept in the same manner as business accounts so that a comparison of the operating costs of Government versus business, for example, is not only difficult but often misleading.*

"3. *Above all, the decision whether to continue or discontinue a Government activity solely on an apparent cost basis runs counter to our concept that the Government ought not to compete in a private enterprise economy."*

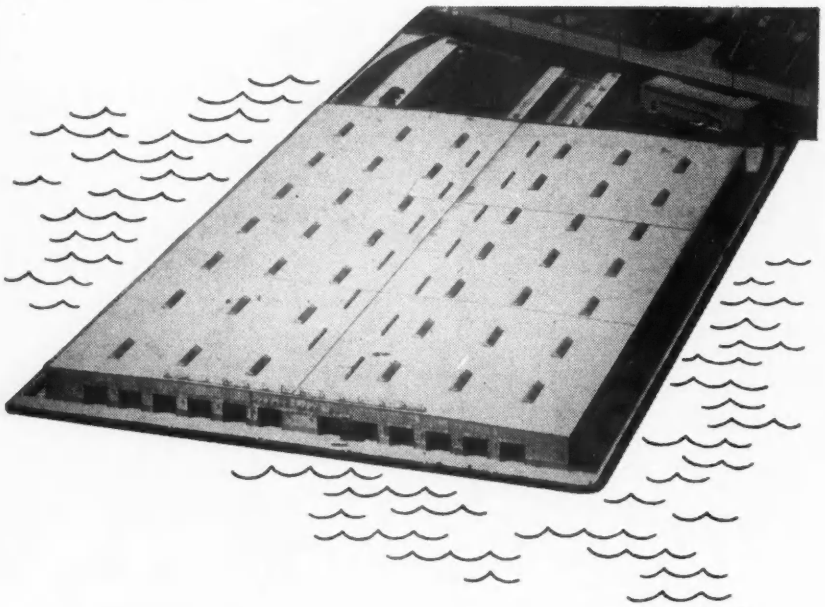
Certainly most believers in the free enterprise system would applaud Mr. Brundage's statement.

Another step in the direction of getting government out of business that should be conducted by private commercial companies consisted of directive 4100.15 by the Secretary of Defense dated April 27, 1955. This established the policy of the Defense Department that:

". . . the use of government-owned and operated commercial and industrial type facilities will not be authorized after review except when it can be clearly demonstrated that private enterprise cannot perform the service or provide the products as necessary to meet current and mobilization requirements, or that in the execution of the military mission, operation by the Government is a necessity.

While this directive listed six grounds upon which continued use of such facilities would be justified, the spirit of the mandate obviously was that of getting the military out of private business operations as early as practicable. The Assistant Secretary of Defense, Supply and Logistics, was designated as the responsible official to develop a continuing program to this end.

The extent to which the govern-



DEPENDING ON REPUBLIC!

The all-important structural piles of this pier are southern yellow pine pressure-creosoted by Republic Creosoting Company.

In either fresh or salt water, creosoted wood has stood the test of time. For dependable, long life service, obtain Republic Creosoted wood products.

*Port of Boston Authority, Charlestown, Mass. Courtesy of Merritt Chapman & Scott Corp.

Republic CREOSOTED PRODUCTS

REPUBLIC CREOSOTING COMPANY
MERCHANTS BANK BUILDING, INDIANAPOLIS 4, INDIANA

ment over the years has gone beyond proper limits in embarking upon business ventures which in a free economy should be left to private enterprise may have been one of the things the late Justice Brandeis had in mind when he said: "Experience should teach us to be most on our guard to protect liberty when the Government's purposes are beneficient. Men born to freedom are naturally alert to repel invasion of their liberty by evil-minded rulers. The greatest dangers to liberty lurk in insidious encroachment by men of zeal, well-meaning, but without understanding."

If any Independent telephone company is confronted with one of these problems involving communications in its operating territory and will bring the matter to the attention of our Association we shall be glad to furnish copies in full of the above mentioned policy statement of the Budget Bureau and of the directive of the Defense Department and to be of assistance otherwise.

Engineering Seminar

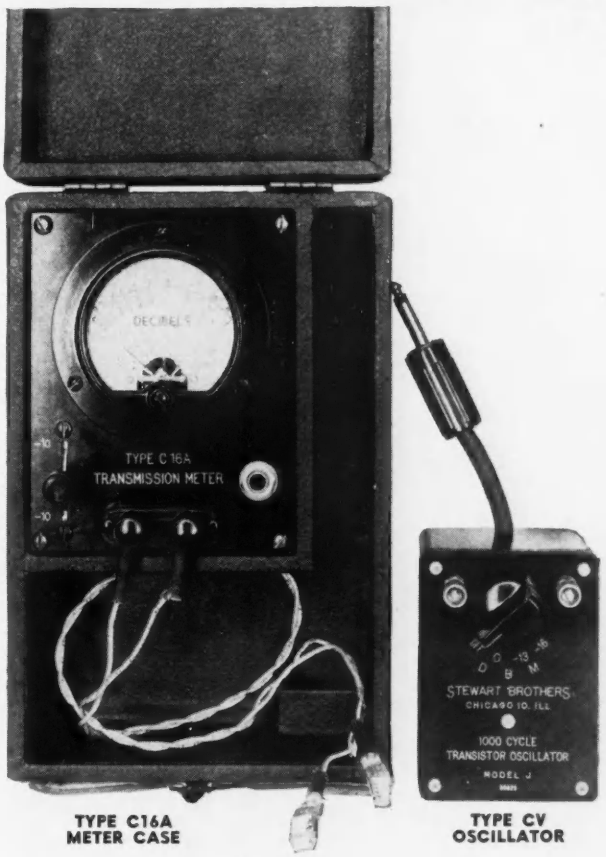
AN ACTIVITY sponsored by the U-S-I-T-A last summer was an engineering seminar conducted at Michigan State University, running from June 30 through July 26. This was an outgrowth of recognition of the growing need for more engineers in the telephone industry. After considerable exploratory work the Subcommittee on Engineering Education of our Personnel Committee chose the university mentioned as the most promising place to have a summer session on telephone engineering problems.

A brochure describing the course was prepared by the university in collaboration with our Subcommittee and distributed to Independent companies likely to be interested; and the Subcommittee did the screening of "students" for acceptance. The University of Michigan provided some competent instructors, and six qualified persons from the telephone industry made up the rest of the faculty. One person present as an observer has remarked that the courses presented an excellent pro-

Please turn to page 112

NOW! Check your Line Losses Easily . . .

End Customer Complaints of Poor Transmission



TYPE C16A METER CASE — TYPE CV OSCILLATOR

Use This Portable Type C16A

TRANSISTORIZED 1000-CYCLE GENERATOR AND DECIBEL METER

Take your own direct circuit readings from either end of cable —from any cable terminal to determine loading values.

Check and locate trouble in carrier systems and audio circuits.

Case measures 9½" long, 6¼" wide, 3¾" high. Weighs only 4 lbs.

Equipped with test terminals and test leads with clips—also jack for oscillator plug—meter scales read —10 DB 0 DB +10 DB.

Oscillator measures 2¼"x3"x4" and weighs 10.3 ounces.

Will operate 700 hours continuously—much longer, intermittently on self contained 2 cell mercury battery.

Sold through all telephone equipment suppliers—attractively priced—complete set $148.00 FOB Chicago, Ill.

COMMUNICATION EQUIPMENT & ENGINEERING COMPANY
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One squeeze

SERVES GUY STRAND WITH KEARNEY GUY WIRE CLIPS

Here's the fastest way to neatly and permanently serve up strand ends. The half-formed clip slips easily onto the guy wire and end. It's closed with a squeeze of the KEARNEY Guy Wire Clip Tool . . . or with an ordinary pair of pliers. The whole job can be done in less than a minute.

KEARNEY Guy Wire Clips are available in six sizes of aluminum, galvanized iron and copper.

For Better Construction . . . Safer Maintenance

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KEARNEY PRODUCTS

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gram for engineering education in both the management and engineering field and that they had a flavor and emphasis on the prudent control of money.

While perhaps not without certain weaknesses inherent in the initial effort of an educational program of this nature, the seminar has been generally acclaimed as a very successful one. That it should be continued and enlarged scarcely admits of doubt.

New Smithsonian Exhibit

DURING THE past year your Association through a special committee participated with the Bell System in the preparation and dedication of a new telephone exhibit in the Smithsonian Institution. As everyone knows, that Institution is a repository or shrine in which the achievements of man's inventiveness and talents are presented.

In the new exhibit the telephone story is told in fourteen chapters starting with Alexander the Great with his megaphone. It recognizes the work of many people who contributed to knowledge of sound and progresses through the advance of the telephone and successive developments in the art down to electronic marvels such as transistors and solar batteries. The chapters depict a story that is a part of man's development and rise to his present stature. They properly pay homage to the men who helped make our nation and the world what they are today.

Independent telephone men and women will want to visit the exhibit when they come to Washington.

General Association Committee Activities

OUR ASSOCIATION has 22 regular committees with a total of 196 members together with 14 Regional Small Company Committees having an additional 75 members. The work of the members of these committees is entirely a labor of love. The committees are helpful reservoirs of information on practically all aspects of telephone operation and willingly offer advice and help whenever they are consulted.

The duties and jurisdiction of each committee are carefully outlined in a statement reviewed annually by our Executive Committee. In this way each committee knows exactly what it should do and does not impinge upon or allow its activities to overlap those of any other committee.

From most of the committees reports will be made either directly to this convention or to our Board of Directors and in either case copies will be available in printed form for those desiring them.

(A) Representatives to Outside Organizations: — In order to maintain proper contact with outside organizations whose activities have a bearing on the interests of Independent telephone companies, the U-S-I-T-A has representation through committee assignments or other procedures in such groups as the Chamber of Commerce of the United States, the American Standards Association, the Radio Electronics Television Manufacturers Association, the Radio Technical Commission for Marine Services, the Business and Defense Services Administration of the Department of Commerce, and the Rural Electrification Administration. Our Association also has an officially designated person whose duty it is to maintain liaison with all branches of the military.

(B) Our National Advertising Program: — Our national advertising program, authorized by our Board of Directors in the spring of 1954, is now in its fourth year. Although a few members of our Association are not fully in agreement as to the need for it, the program has been widely acclaimed as meeting a long felt need.

The Independent industry is in the greatest period of its growth. For a long time our branch of the business was an indirect beneficiary of the long sustained advertising program of the Bell System, advertising which that highly successful corporation has found rewarding over many years.

With the increased demands for service in our own areas it became necessary to do something to develop new sources of financing for expansion and plant improvement. There is evidence that our advertising pro-

UNEQUALLED FOR QUALITY DEPENDABILITY PERFORMANCE

EXCHANGE AREA CABLE

Aerial and Duct are R.E.A. listed. Both Aerial and Duct and Direct Burial Cable utilize polyethylene insulation, aluminum shield and high molecular weight polyethylene jacket for top electrical values. Available in #26, #24, #22, or #19 AWG in 6 through 404 pairs.

RURAL DISTRIBUTION WIRE— R.E.A. LISTED

Conductors insulated with high molecular weight polyethylene and jacketed with color coded, weather resistant vinyl provide good transmission values at low cost. Available in either #19 or #22 AWG with 3, 6, 11, or 16 pairs cabled over a high molecular weight polyethylene insulated high strength galvanized support wire.

URBAN DISTRIBUTION WIRE

The rugged weather resistant vinyl insulation over the conductors is fully color coded. This construction, designed for block distribution, serves best where low cost rather than low attenuation is the prime consideration. Available in #24 AWG with 6, 11, or 16 pairs.

ONE PAIR DISTRIBUTION WIRE

A high molecular weight, weather resistant polyethylene extrusion encompasses the parallel conductors. A raised ridge tracer provides polarity identification. The high strength conductors make possible long spans on lateral branches or drop runs. Available in #14 or #12 Copperweld or .083 galvanized steel.

INSIDE WIRING CABLE

Solid, soft drawn bare copper conductors fully color coded with heat resistant polyvinylchloride insulation. All pairs twisted with varying lays to minimize cross talk and cabled to insure maximum flexibility. A tough, water resistant vinyl jacket in either brown or ivory provides good conductor protection for exposed insulation. Rip cord construction prevents damage to conductors in stripping. Available in #24 AWG with 6, 12, 16, 21, 26, 51 or 76 pairs.

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SEND TODAY FOR THIS CATALOG — CONTAINS COMPLETE DATA AND SPECIFICATIONS FOR ALL REX WIRES AND CABLES.

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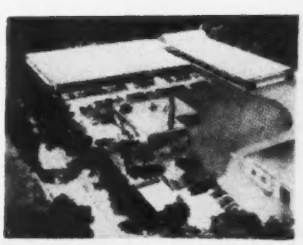


Automatic Volume Control Constant Output AMPLIFIER

Specifically designed for constant level amplification of telephone circuits. Prevents overloading of telephone lines and avoids loss of low level signals. Maintains constant output within ± 1 db with input changes of 30 db. Provided with a double scale meter and transfer switch to indicate degree of compression or output level. Exceedingly rapid automatic gain reduction time prevents syllable clipping. Slow automatic gain increase avoids automatic control at syllabic frequencies.

SPECIFICATIONS

RESPONSE (±1 db)	20 to 20,000 cps.
OUTPUT CONSTANCY	±1 db (30 db input change)
S/N RATIO	60 db
HUM AND NOISE	—60 dbm
INPUT IMPEDANCE	600 ohm c.t.
OUTPUT IMPEDANCE	600 ohm c.t.
LINE VOLTAGE	117 volts, 50/60 cycles
DIMENSIONS	19" x 7" x 8¾"

For complete technical specifications and direct factory prices write to Dept. TE: 10

AMPLIFIER CORP. of AMERICA
398 Broadway, N. Y. 13, N. Y.

Stewart

TEST EQUIPMENT

Locates Trouble FAST

1000 Cycle TRANSISTOR OSCILLATOR

MODEL J

A Stable power source, for locating trouble in carrier systems and audio equipment.

Self contained mercury battery with operating life over 700 hours

Pocket size, 2¼" x 3" x 4", Wt. 10.3 Oz.

STEWART BROTHERS
Division of Instrument Laboratories
Chicago 10, Illinois

gram is helping to acquaint investors with the soundness of Independent telephone companies as investment opportunities and with their importance to the economy of the cities and towns in which they do business.

It was also believed that by giving Independent telephone employes a sense of belonging to an essential industry an advertising program would stimulate interest in employment opportunities among our companies.

It likewise seemed only appropriate that the American people should be made aware of the fact that but for the existence of Independent telephone companies serving two-thirds of the geographical area of the United States, the nation's communication network would not be a complete one. Here again our advertising program is paying off.

The program is carefully supervised by a Committee of the Association and is reviewed periodically by our Board of Directors.

Operating Results

ONE OF the important activities of our Association is the compilation and distribution of statistical data relating to the operations of Independent telephone companies. For the past three years our annual statistical volumes have reflected operating results data not only of Class A and B companies but also of Class C and D. Figures for the current volume were obtained from most A and B companies but not all. Reporting C and D companies represented a very small minority of the total of such companies.

The number of reporting companies by classes for 1956 and 1955 was:

	1956	1955
Class A	204	181
B	94	106
C	57	67
D	51	38

Because of the difference in the number of reporting companies from year to year accurate comparisons with earlier years are impossible.

Our 1957 statistical volume reflecting figures for the year 1956, shows that 207 Class A companies accounted for 6,878,246 stations; 110 Class B companies 287,370; 73 Class C companies 92,364 and 47 Class D companies 27,277, a total of 7,285,257. This represents a station increase over 1955 of 645,795. The company-owned stations of these 437 Class A, B, C and D companies made up about 80 per cent of an estimated 9,112,000 stations served by 4,390 Independent telephone companies in 1956, the reporting year.

The total plant investment of reporting Class A, B, C and D companies on December 31, 1956 amounting to $2,013,054,000 was $300,437,000 greater than the amount recorded at the close of 1955. Reporting companies' total plant investment was 87% of the total industry which was about $2,323,052,000.

In 1956 Class A, B, C and D companies reported gross operating revenues totaling $570,929,000, an increase of $67,776,000 over 1955. Thus the 437 reporting companies accounted for about 88 percent of the estimated total revenue of $648,222,000 for 4,390 companies. The above mentioned revenue figure of $570,929,000 was derived from the following sources:

$370,587,000	Local Service
178,728,000	Toll Service
21,614,000	Miscellaneous

Annual gross operating revenue per station rose from $78.65 in 1955 to $81.79 in 1956, while operating expenses including federal income and other taxes rose from $64.95 to $67.30. The average per station revenue of Class A Independent companies alone was $82.90. By way of contrast, it is interesting to note that the average annual per station revenue in the Bell System was $121.80 while operating expenses including all taxes amounted to $105.26. The ratio of expenses to gross revenue for all reporting Independents was 82 per cent. This compares with 86 per cent for the Bell System.

Operating expenses excluding taxes for A, B, C and D Independent reporting companies rose from $314,150,000 in 1955 to $355,726,000 in 1956. The increase in operating revenues exceeded the increase in operating expenses by $26,200,000.

The tax burden amounting to

$114,064,000 increased $12,699,000 over 1955. The largest increase in operating costs was in maintenance expense. In 1955 this expense amounted to $89,771,000 and in 1956 it was $103,766,000, an increase of $13,995,000.

The net amount available for payment of fixed charges increased in 1956 over 1955 by $13,928,000. The total amount which was available for fixed charges at the close of 1956 was $103,174,000 compared with $89,246,000 at the close of 1955.

While as heretofore shown plant investment in 1956 increased $300,437,000, net income available for dividends increased $9,840,000. Net income available for dividends rose from $66,846,000 in 1955 to $76,686,000 in 1956. The 1956 amount represents a return of 3.8 per cent upon a total plant investment for A, B, C and D reporting companies of $2,013,054,000. For Class A companies alone the rate of return was 3.9 per cent. In 1955 the return on a plant investment for all companies of $1,712,617,000 was 3.9 per cent.

We wish to repeat the caution expressed earlier in this summary. Because of the difference in the number of companies reporting in 1956 versus 1955 an accurate comparison between the two years is impossible.

Importance of State Associations

I WOULD like to embrace this opportunity to express appreciation for the uniformly excellent cooperation the U-S-I-T-A has received from the several state associations. These groups, thirty-four in number, many with full-time secretaries, perform a very useful service for their members not only on local problems but also on broad matters of national concern whenever their assistance is requested.

There never has been a time in the history of our industry when there was more need for a close relationship between the national and the state associations. We shall continue to welcome the help of these state groups in dealing with matters of national concern. We likewise welcome a continuing opportunity to

Please turn to page 118

Telephone batteries engineered for—

extra-dependable power . . . plus!

C & D PlastiCell®

Extra-dependable packaged power! Extra advantages, too!

The best "salesmen" for C & D PlastiCell® batteries, you'll find, are the large number of friends these *advanced-engineered* batteries have made among telephone men in important exchanges across the country. C & D PlastiCell telephone batteries give you much more than extremely reliable power. You also get:

- **One-piece, permanently-sealed plastic case.** Entire unit is shock-resistant . . . lighter and more compact than glass or rubber.
- **More compact installations.** With smaller dimensions for a given capacity, C & D's take up less battery room space.
- **Easier maintenance.** Patented Post Seal eliminates acid creepage.
- **Lower costs.** Light plastic case reduces shipping costs . . . total in-place costs.

These plus many other benefits mean th[illegible] in the telephone field, C & D is—

Your better battery buy!

Literature available

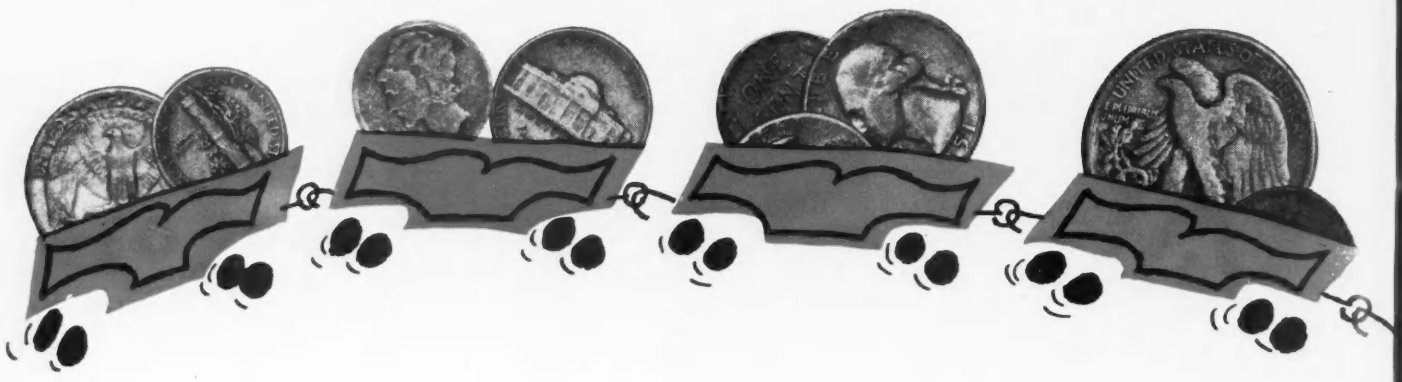
Write for complete description and specification in C & D PlastiCell Bulletin T-527

C&D BATTERIES, INC.
of Conshohocken, Pa.

SINCE 1906

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

REVENUE IS ROLLING IN WITH THE ELECTRONIC SECRETARY! *



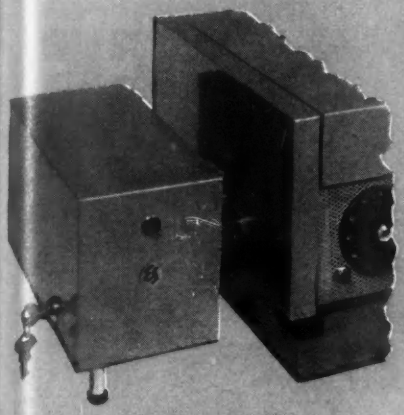
MODEL DCR-1

PROVIDES A COMPLETE TELEPHONE ANSWERING SERVICE FOR YOUR SUBSCRIBERS AND BRINGS YOU A STEADY FLOW OF REVENUE

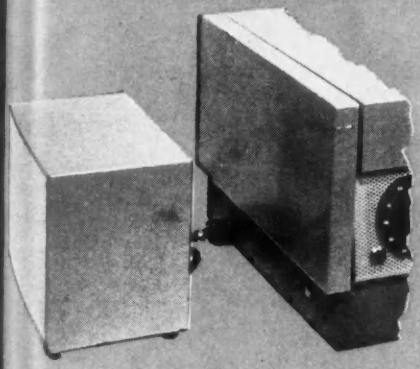
Telephone companies now providing the *Electronic Secretary* find that revenue is literally *rolling in!* Use of the *Electronic Secretary* in both the home and the office has been a great money-saving item for subscribers—and they're glad to pay well for this service.

With the *Electronic Secretary* your subscriber no longer worries about missing important phone calls. It will answer his phone courteously, dozens of times a day. It works around the clock, records name, number and message, or tells the caller to call another number—a complete secretarial service! A wonderful source of revenue for the telephone company! For complete information call your Automatic representative or write to Automatic Electric Sales Corporation, Northlake, Illinois.

*ELECTRONIC SECRETARY is a registered trademark of Electronic Secretary Industries, Inc.

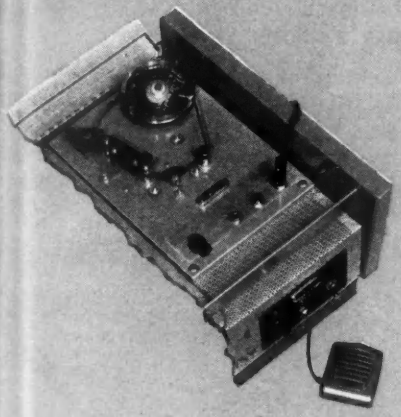


Remote Call-Back Addition for Model DCR-1 Electronic Secretary. Subscriber hears recorded messages by transmitting a tone signal over remote phone. Machine then switches to normal operation.



VCR-4 Voice Control Attachment for Model DCR-1 Electronic Secretary. Permits caller to record message for extended period of time. Message is recorded as long as caller continues speaking.

To help boost your sales of the Electronic Secretary we will send you sales literature and envelope stuffers upon request.



Tape Adapter for Model DCR-1 Electronic Secretary. Records outgoing messages. Uses microphone, endless tape cartridge (1½ min. to 3 min.).

AUTOMATIC ELECTRIC

A member of the General Telephone System – One of America's great communications systems

GENERAL TELEPHONE SYSTEM

Model T-1 Electronic Secretary. Answers telephone in subscriber's own voice by means of endless tape cartridge (capacity 30 sec. to 2½ min.). Ideal where messages change frequently.

learn to know the state organizations even better through furnishing speakers for their state conventions and in other ways, and to discuss our mutual problems with them on other occasions. The field of service is great. Our common goals are many.

Industry Journals

I SHOULD FEEL remiss if I failed to pay tribute to our alert trade journals. With pages filled with noteworthy articles and information relating to telephone operating and management problems, these publications are serving our industry with constantly increasing usefulness. They rank high among the trade publications of the country and deserve the support of telephone people.

Many companies have adopted the practice of making the journals available not only to executive, administrative and supervisory personnel but also to other employes. This benefits both the employe and the company by giving the former an increased appreciation of the importance of doing his job well and improving his perspective, and the latter by the superior workmanship which comes from the added knowledge the workers acquire.

Our Independent Manufacturers and Suppliers

IT IS PROPER that on this anniversary occasion something should also be said about the manufacturers and suppliers who provide the equipment and furnish other indispensable service to our telephone operating companies. There are several hundred manufacturers, suppliers, sales organizations, directory publishers and engineering and accounting firms in the Independent telephone field.

Of many of these firms it can be said that they produce a product or a service of a quality that ranks among the best in the world. Wholesome competitive pride among the different classes of such firms produces healthy rivalries that inure to the benefit of the telephone operating companies and the people who pay for telephone service. Without these firms it is probably fair to say that there could not be an Independent telephone industry.

Relations with Bell System

IT SEEMS appropriate in this round-up report to refer to the pleasant relations between the Independent segment of the industry and the Bell System. There is within both groups recognition that the common objective of providing the best telephone service possible is more likely to be realized where there is mutual confidence and respect and where representatives of Independent and Bell companies feel free to call upon each other for consultation, advice, and the interchange of ideas.

As Mr. E. C. Blomeyer remarks in his article, "50 Years of Independent Telephony," written in 1947, any differences that existed between the two groups in an earlier period have long since been ironed out, and any questions now are happily settled across the council table.

Mr. Blomeyer also stated it correctly when he said: "During the years . . . there has come about a species of cooperation between the two groups in the telephone industry that has been helpful to both, and which is based upon due recognition by each group of the integral position of the other in the telephone industry in this country. It can therefore, we think, be correctly said that there now exists in the telephone industry in this country, regardless of its diversity of ownerships, an element of solidarity which has as its principal aim supplying the country with the best possible telephone service."

Conclusion

A KEEN STUDENT of the trade association movement in the United States has expressed the opinion that "when democratic institutions are crumbling around us in the political world, when the paternalism of the American Government encompasses the welfare of the individual from the cradle to the grave, and when the very security of the country seems to demand procedures foreign to the freedoms known to de Tocqueville, the trade association stands as a powerful institution which can, if encouraged, help guarantee the continuation of democractic institutions."

The review of Association activi-

FREE DATA FILE →

New compilation offers full facts on chargers, shows how to obtain maximum battery life!

Now available for the first time in one complete, concise folder is the latest information on battery chargers for telephone application. Based on Raytheon's 27 years' experience in telephony, this authoritative compilation of engineering facts describes the relationship between battery charging and battery life, clearly explains charger operation and, most important, shows how proper charging can help you obtain the longest possible life from your batteries.

Detailed catalog information and price lists are also included in the Raytheon data file. For complete battery charger facts in one convenient folder, please write today. Use the handy coupon—no obligation, of course.

TABLE OF CONTENTS

Factors Affecting Battery Life and Operation • Requirements for a Battery Charger • Battery Charger Theory of Operation • Price Lists, Specifications • Detailed Catalog Data

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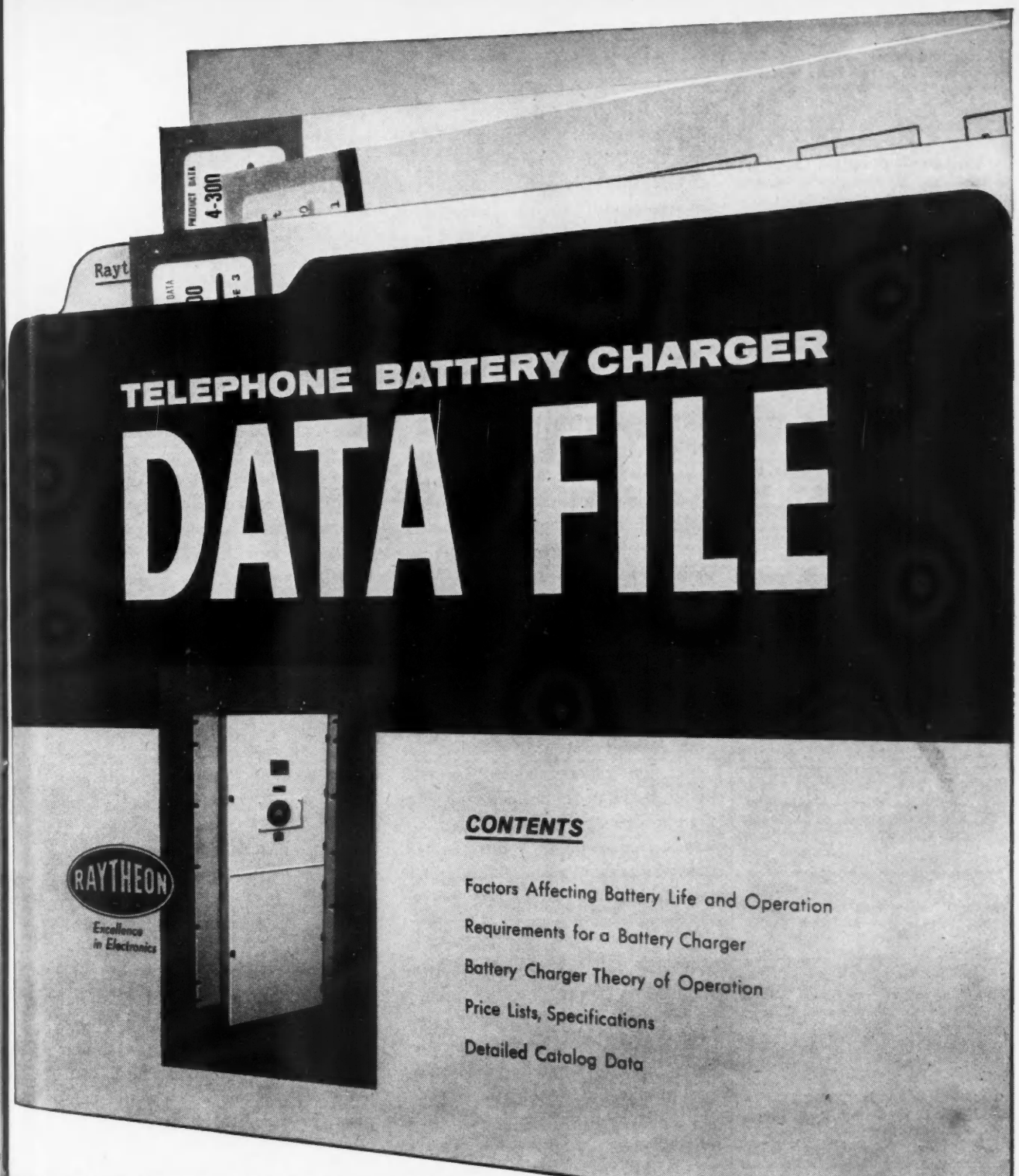

CONTENTS

Factors Affecting Battery Life and Operation

Requirements for a Battery Charger

Battery Charger Theory of Operation

Price Lists, Specifications

Detailed Catalog Data

TO: Raytheon Manufacturing Company
Commercial Equipment Division, Waltham 54, Massachusetts

Gentlemen:

Please send me your Battery Charger Data File, without cost or obligation on my part.

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COMPANY .....

ADDRESS .....

.....

A-4038

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BELTS — CLIMBERS — COMPLETE LINEMEN'S EQUIPMENT, *W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.*—[ADV. 2]

BOOTHS—Acoustic Telephones — *Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.*—[ADV. 3]

BORING MACHINES, EARTH — *Highway Trailer Co., Edgerton, Wisc.*—[ADV. 4]

CORDS, Switchboard (with or without plugs), Instrument (retractable and regular) and Operators — *Commercial Cord & Supply Co., Inc., 26 Main St., Clifton Springs, N. Y.*—[ADV. 5]

CORDS, Switchboard & Telephone — *Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.*—[ADV. 6]

PIPE PUSHERS — *Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa*—[ADV. 7]

POLES, Southern Yellow Pine — *Taylor Colquitt Company, 217 E. Main St., Spartanburgh, S. C.*—[ADV. 8]

POLES, Southern Yellow Pine — *Texas Creosoting Co., Orange, Texas.*—[ADV. 9]

PROTECTIVE EQUIPMENT — *Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.*—[ADV. 10]

REBUILT TELEPHONES & SWITCHBOARDS — *Tallen Co., Inc., 159 Carlton Ave., Brooklyn 5, N. Y.*—[ADV. 11]

TELEPHONE EQUIPMENT AND SUPPLIES — *Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 26, Ill.*—[ADV. 12]

WIRE, Insulated — DATED DROP WIRE — Neoprene or Weatherproof — *Alphaduct Wire & Cable Co., New Brunswick, N. J.*—[ADV. 13]

WIRE, Insulated Drop and Bronze or Copperweld — *Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtusket, R. I.*—[ADV. 14]

(*Concluded from page* 118)

ties which has been given in this report, read in conjunction with committee reports that will be available at this convention, shows I believe that the U-S-I-T-A continues to be energetically engaged in acquitting its responsibility to the Independent industry.

Those associated with me in the Association's headquarters join in expressing appreciation to our Board of Directors and to individual member companies for the confidence they have reposed in us and the cooperation they have so generously extended in so many ways and upon so many matters. —*Clyde S. Bailey.*

Telephone Fair Return

(*Continued from page* 62)

(c) Some witnesses who oppose the companies rely almost entirely on a statistical, mathematical approach, which on the surface seems simple and understandable. Their serious fallacies can only be understood readily by someone who has been steeped in the subject or who is willing to spend tedious hours trying to fathom their full significance.

(d) I said at the start that there were some special problems faced by the telephone industry. Foremost of these is the fact that so many people both in and out of regulation are under the impression that the telephone industry should earn no more than the electric industry. In other words, your rate of return is held down by what applies to the electric industry. Certainly any fair analysis of the situation would reveal that your industry is much more risky and deserves a higher rate of return.

Investors appraising the relative merits of an electric company as compared with a telephone operation would analyze not only comparative past results but would also consider the potential risks involved. I have attempted to stress this time and time again, but with limited success. I have decided now to use a new approach. Let me try it on you. I call it my "Nightmare Exhibit."

Let us assume you are president of an electric company and that you went to bed one night and had a bad dream. You dreamt your electric company was suddenly transformed into a telephone company and that as this change occurred you visualized the following:

First, all of the many customer appliances which made up your great diversified load are turned into just one appliance, the telephone. Your diversification is lost and your vast prospects for load building are constricted, because instead of having the hundreds of manufacturers and thousands and thousands of dealers building your load, you alone now have to promote what you have left.

Second, your wage bill which represents 20 per cent of your electric operating revenues soars to over 40 per cent and you lose the advantage of the part of your expenses represented by fuel costs which automatically goes off, if your load falls, and which is partly protected against inflation by fuel adjustment clauses.

Third, instead of being in a decreasing cost business, you are switched into the spider web situation of increasing costs. At this point, you wake up in a cold sweat and realize that fortunately it has been just a bad dream. However, sound logic must compel you to say that you certainly would want a higher rate of return if your electric company did become a telephone company, in order to allow for the less attractive nature of the business.

Then there is the "small company" problem which many of you represent. A small company unquestionably has to pay higher rates for capital than a large one. And consequently such companies must receive a higher fair return. If this is not recognized, the smaller companies will be forced out of existence.

(5) Rate base . . . Since we have had a serious inflation, rate base is of particular importance. Fair treatment to investors requires an

Please turn to page 122

SUPERIOR CABLES

Better communication cables . . . completely insulated and sheathed in modern plastics!

TEL-C

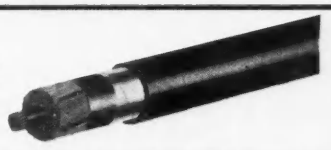
For all aerial and duct use. Meets REA Spec. PE 14. 6 to 909 prs. 24 and 22 ga. 6 to 404 pr. 19 ga. Quadded or composite.

TEL-CA

For aerial, duct or direct burial installation. Extra mechanical protection. 11 to 202 prs., 24, 22 and 19 ga. Quadded or composite.

TOLL

Available in pairs, quads and in composite with regular exchange area cables. Meets rigid electrical requirements needed for toll service. Conductors meet ASTM B-3.



RDC

For extension of service in rural areas where long runs are required. Color-coded. High strength steel support wire. 1-16 prs.

UDC

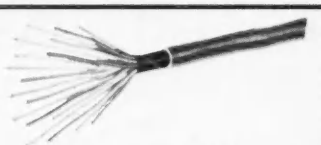
For short run installation where demand for service is high, low-cost construction is required. Self-supporting. Color-coded. 6 or 16 pr. 24 ga.

COMPOSITE

Complements of different gauges provided under one sheath to meet engineering requirements. Same high standards maintained.

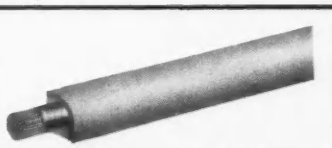
INTERCOM

Inside wiring cable, multiple conductor paired. Fully color-coded for intercommunication, inside telephone, sound systems. Special vinyl jacket.



QRC

Quarter-round shaped jacket in choice six std. colors. For use in offices, hotels, etc., for intercommunicating and sound-systems. Up to 51 prs. Features neat, quick, easy installation.



INSIDE TELEPHONE WIRES & CABLES

For inside buildings to extend circuits from outside terminating devices to station sets. Jacketed inside-outside wire. Duct wire (twisted). Flat web type. Jumper wire. Distributing frame wire. Ground wire.

PLW .083S

.083 inch galvanized special steel wire conductors. Insulated in parallel with high molecular weight polyethylene. Self-supporting.

PLW 214 CW

14 gauge solid copperweld conductors. Same insulation as PLW .083S to meet very rigid electrical standards. Self-supporting.

PLW 212 CW

12 gauge solid copperweld conductors. Same insulation as PLW 214CW. Self-supporting. All PLW types for long drop runs at minimum cost.

PLWT 1 - PLWT 2

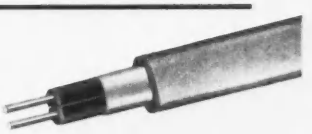
Terminal is self-supporting on line wire. Simplifies drop-line connections. Provides continuous positive contact. Use with Superior PLW.

DB 217S

Direct burial wire, spiraled flat steel strip shield for maximum resistance to damage from road or farm machinery and equipment.

DB 217B

Direct burial wire, longitudinal bronze shield to resist damage from insects and rodents. Also use in areas conducive to lightning activity.

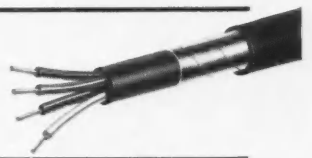


DB 217

Non-armored type wire for uses in areas where conditions are normal. All DB wire available with 17 or 16 ga. conductors.

"B" SERVICE WIRE

For direct burial use. Resists physical damage. Excellent protection against lightning. 2 pr. 20 ga. copperweld conductors. 40% conductivity. Color-coded.



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Splice sleeve with one end sealed. Filled with insulating and waterproofing material. Use to keep splices waterproof. REA standard.

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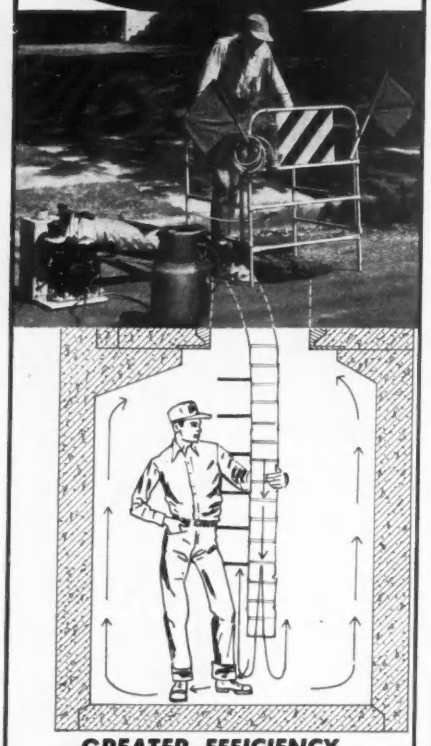

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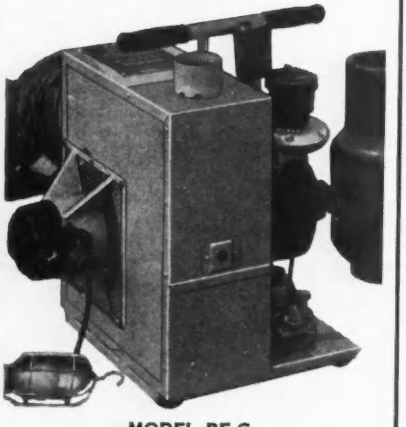

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Electric models also available.

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allowance for the inflation factor through rate base. Some jurisdictions today still cling to original cost.

Unfortunately, the history of utilities has witnessed an opportunistic switching back and forth from original cost to an allowance for reproduction cost and visa versa, whichever suited regulation or the companies best at the particular time. This has certainly helped to make the problem a difficult one today.

(6) Whole problem highlighted today . . . At times, the occasion may arise when a utility may have to consider reducing rates, if its rate of return remains too high. Management must take a constructive approach with regulation when such a situation develops. However, let me stress that such a happy earnings situation does not exist today.

Under present inflation, this whole problem of fair treatment to investors is highlighted, with expenses continuing to spiral and rate of return sliding downward. Furthermore, interest rates which are a part of the cost-of-capital have increased substantially within the past year. Inflation and higher interest rates require rate increases.

Thus, there is undoubtedly going to be a greater need for rate increases in the future. In seeking to obtain those rate increases, the cards are stacked against the company. Many clouds darken the prospect of a company's efforts to treat the investors fairly.

Solution

THERE IS NO easy and quick solution. The problem must be attacked from all angles in a vigorous way. It will require endless work on the part of management and right on down through the entire organization of every utility along the following lines.

(1) *Excellent service . . .* All my remarks presuppose that every utility company has as its goal the provision of excellent service. If not, there is little hope that any other efforts to solve this problem will be of any avail.

(2) *Public relations and education . . .* As yet, the public just doesn't understand your problems and in par-

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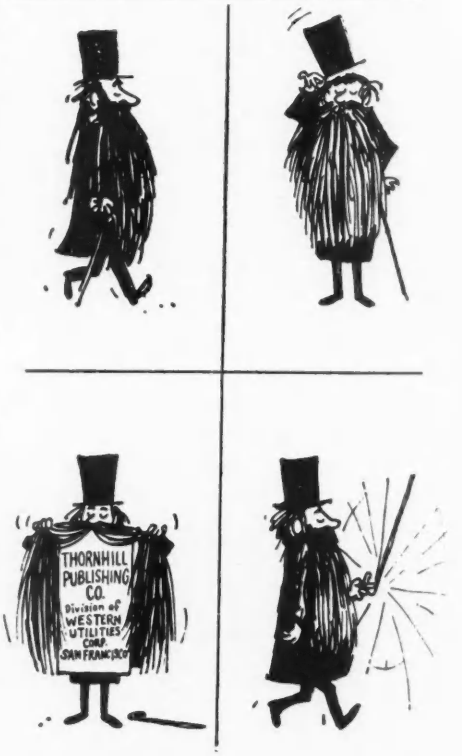

A complete telephone directory publishing service

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BEAVERTON, OREGON

ticular this matter of fair treatment for investors. You have got to double and triple your expenditures on public relations and education at all levels and through many media. This, of course, implies a thorough educational and training program for your employes, who are your front line salesmen.

Your public relations must also encompass some effort to get a better story to your customers through the press. No one is directly to blame for this obstacle, but it is a serious one.

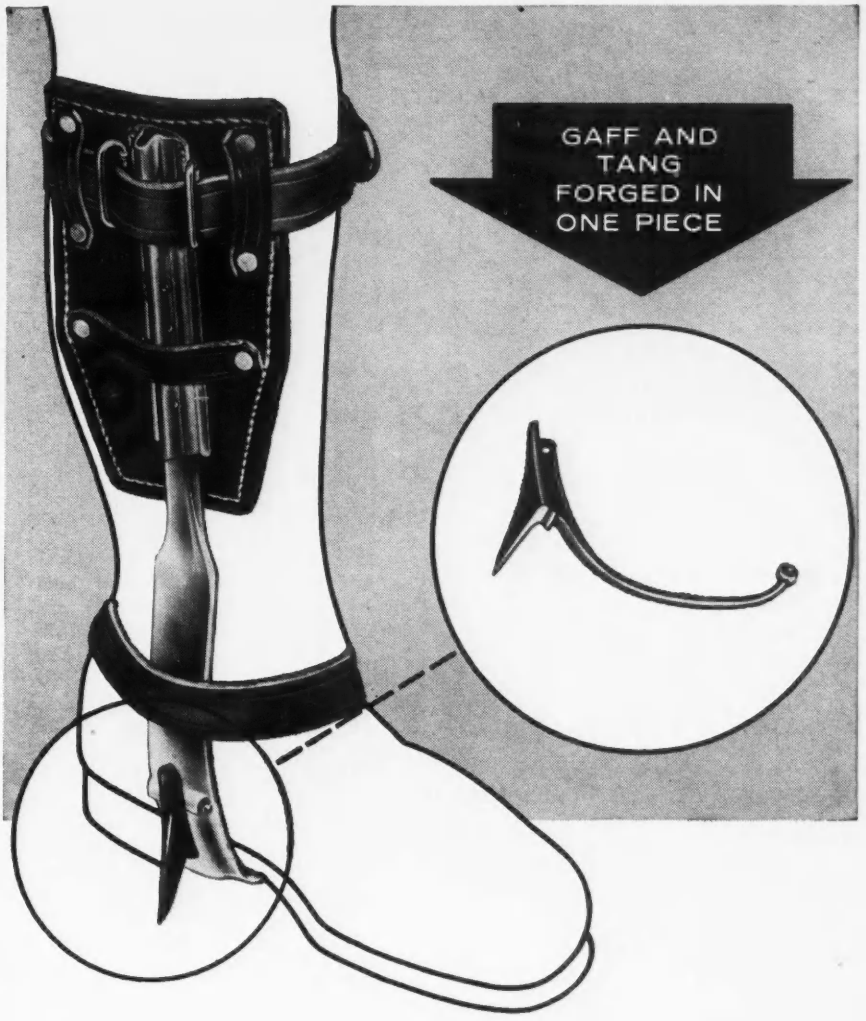
With regard to public relations in general, I might add that regulation is quite sensitive to your public relations and rightly so. Their job is made much easier if your outreach to the public is good.

(3) *Every utility company should work continuously with regulation in order to build a sound relationship over the long run and not just during a rate proceeding.* You have got to approach the problem fully recognizing that regulation has a very tough job to do.

(4) *I stressed the difficulty of proof of a fair return.* Much more work is required on the part of the industry in this respect. It should be looked upon as an ever present job and not one to be tackled just when a rate case arises. Such an approach is bound to lead to errors which will cause irrepairable damage.

Conclusion

IN CONCLUSION, let me say that I am not overlooking what your team of management and employes has done to provide a marvelous communication system for our country. This has been a superior achievement. However, I do not hesitate to emphasize that yours can't be a healthy industry for the investors or for the consumers, unless you are kept financially healthy. And this requires fair treatment to the investors who put up the capital. I sincerely believe that the problem is sufficiently urgent to require much more effort on your part in many different directions.—*Adapted from paper presented at the* 1957 *USITA Convention.*



Here's why M-S-A–Brooks Adjustable Climbers provide greater safety–durability

Gaff and tang forged in one piece: That's a statement that makes plenty of safety-sense to workers who depend on a small "tooth" of steel to support their weight high above the ground. This feature is exclusive with the M-S-A–Brooks Adjustable Climbers. And there's more to the story. The gaffs and leg irons are forged from high quality, medium carbon steel, heat treated to assure the proper balance of hardness, toughness and ductility.

Inspection plays an important role, too. Every leg iron and gaff is examined by the magnetic particles method. Statistical sampling is used for impact, absorption, Rockwell hardness and metallurgical tests. And all this means greater safety, longer wearing qualities . . . less maintenance.

Pads and straps are made of top grain steer hide with chrome leather reinforcement on the leg side of the calf pad. The result—maximum comfort on the job.

Write for complete details.

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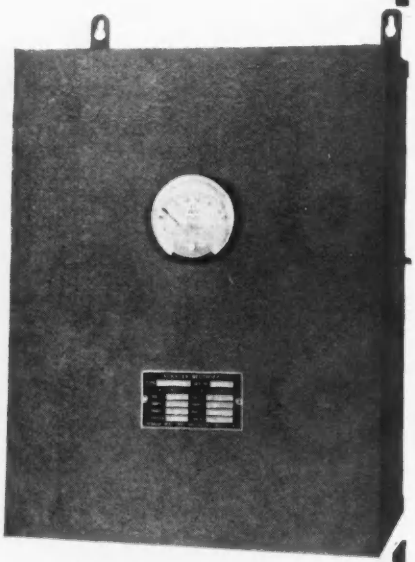
Dependable Power

for Years-
and Years-
and Years-
of Service!



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OUR 50TH YEAR

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CINCINNATI 42, OHIO

LIONEL H. ORPIN has been named director of plans and programs of Stromberg-Carlson. In this newly created position Orpin will be responsible for planning the future operations of Stromberg-Carlson, a division of General Dynamics Corp. His appointment will facilitate the expansion of Stromberg-Carlson's present product lines, development of new products, and the orderly growth of the company in accordance with long-range plans and objectives.

Permacel Tape Announces Industrial Adhesives Dept.

FORMATION of an Industrial Adhesives Department by Permacel Tape Corp., New Brunswick, N. J., has been announced by George C. Riegger, Permacel president.

Director of the new department is John O. Green, who has been serving Permacel in various administrative capacities. Mr. Green is assistant secretary of the company and a member of the board of directors. He also is a vice president of LePage's, Inc., a Permacel subsidiary, and has been in charge of the bulk and industrial sales of that company.

According to Riegger, the Industrial Adhesives Department will market both Permacel and LePage's products. The LePage's line includes bulk liquid fish glue, white glue, contact cement, padding compounds and various synthetic adhesives. The department will also handle LePage's Photo-Engraving Glue and prepared glue top.

Permacel products will be represented by pressure-sensitive adhesive masses and epoxy resins. The depart-

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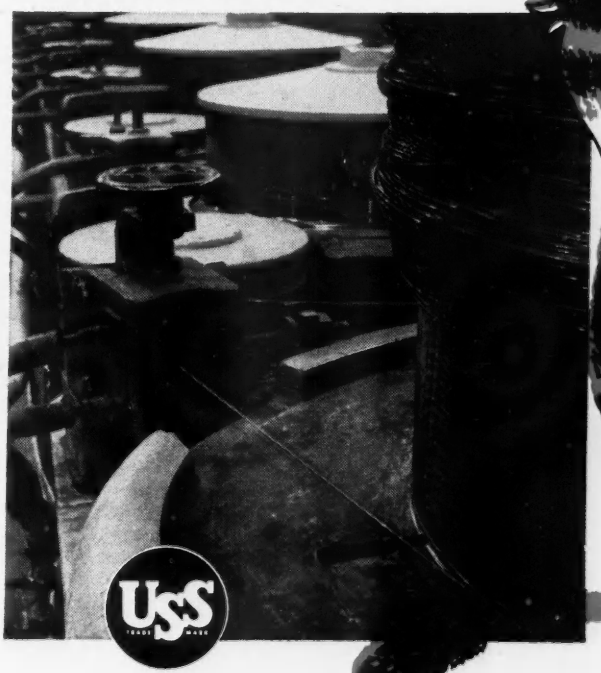
PART III:
Drawing the Wire

THE MANUFACTURE of even ordinary wire is a complicated process requiring expensive equipment and highly skilled labor. For producing a highly specialized analysis high strength wire like USS Amertel Telephone and Telegraph Wire, the process becomes even more complex. At American Steel and Wire plants where USS Amertel is produced, the finest wire heat-treating, drawing, and zinc-coating equipment is utilized. Constant quality control at each stage of the processing assures the maximum in desirable mechanical and electrical properties.

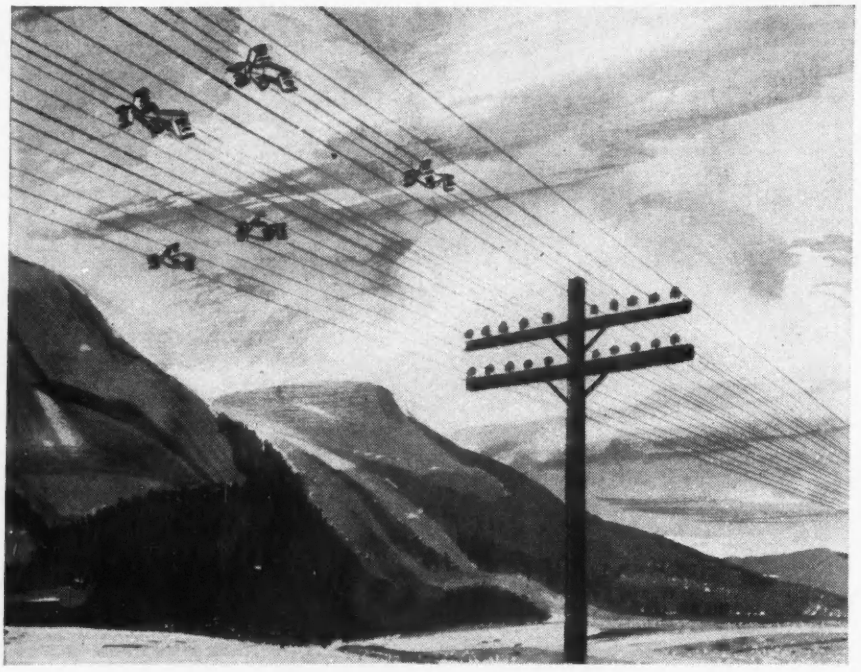
All of this equipment, skill, and quality control pays off in the final product, for USS Amertel is a truly superior wire. When you use the high strength grades of USS Amertel, it is possible for you to use longer spans. You save on original pole costs, on pole hardware, on digging time, and on pole installation and maintenance. Also, you get longer wear from USS Amertel; you get better voice transmission, as well as low electrical resistance.

AMERICAN STEEL & WIRE DIVISION
United States Steel, General Offices: Cleveland, Ohio
Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
Tennessee Coal & Iron Division, Fairfield, Ala., Southern Distributors
United States Steel Export Company, New York



USS TIGER BRAND AMERTEL *Telephone & Telegraph Wire*

UNITED STATES STEEL



MID-SPAN TRANSPOSITIONS...

easily, accurately and economically installed

with Case aluminum span-point brackets

The Case span-point transposition bracket now makes it possible to transpose communication wires at any point of the line **between poles,** regardless of pole spacing ...eliminates the need for special transposition poles. This lightweight (only 3½ lbs. complete with insulators and bushings) non-corrosive, ruggedly designed bracket features insulators that roll thus protecting wire insulation in stringing and reducing installation time. It is the **only** bracket designed **especially** for mid-span transpositions.

All Case transposition brackets come equipped with a special rubber bushing... in the event of glass insulator breakage, the line wire falls on the rubber bushing, with no loss of communication service.

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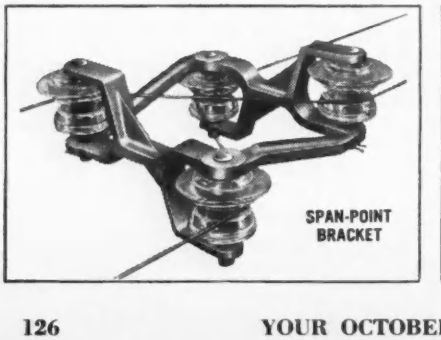
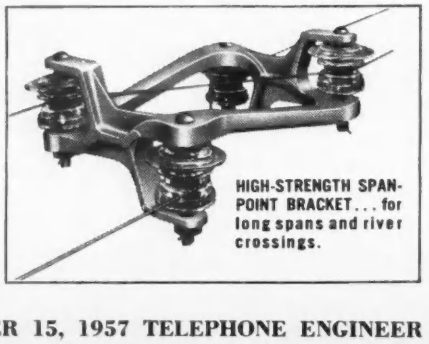


SPAN-POINT BRACKET



HIGH-STRENGTH SPAN-POINT BRACKET... for long spans and river crossings.

ment is considering plans to market a neoprene all-purpose cement and a butadiene-acrylonitrile all-purpose adhesive. It was announced also that the department will be available to develop special purpose adhesives.

Along with the announcement of the new unit, Riegger said that within the Industrial Adhesives Department, H. Walsh is managing LePage's products, and J. Norman is product manager for Permacel products.

Lynch Carrier Announces Personnel Appointments

LYNCH CARRIER SYSTEMS, INC., manufacturers of telephone and telegraph carrier equipment, recently announced the following appointments:

(1) *Walter E. Noller* to the newly created position of director of product planning. In this position he will be responsible for the investigation of new product needs in the commercial telephone and communicating industry.

For the past several years Mr. Noller was chief development engineer for the Lynch Co. His previous experience had been with the Bell Telephone Laboratories and the Pacific Telephone & Telegraph Co.

(2) *Arie Slikkerveer* as chief network engineer, with responsibility for theoretical engineering design. Mr. Slikkerveer has been with the Lynch Co. for the past eight years.

He was born in The Hague, The Netherlands, and educated in Holland at Leiden and Delft Universities in Electrical Engineering. He has held various high-level engineering positions in Europe with such companies as the Deutch Telephone Administration of Holland, and in the Dutch East Indies with subsidiaries of several American oil companies. During World War II Mr. Slikkerveer was attached to the Royal Netherlands Navy, operating both in the South Pacific and in Europe.

(3) *Fulvio F. Garzoli*, who for the past several years has been a project engineer with Lynch Carrier Systems Inc., has been appointed to the position of chief design engineer. In addition to telephone equipment design, Mr. Garzoli has worked in the

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field of aerial camera control systems and aerial navigational equipment design.

Push Button Dialing Developed For Rural Radiotelephone Users

ONE OF THE latest telephone achievements, developed by Motorola for the Rural Electrification Administration, is a push button dialing, radiotelephone system for automatic exchanges that is suited to the communication needs of both home subscribers and mobile radio users in sparsely populated areas.

The new system has been field tested for several months by the Central Virginia Telephone Corp., Amherst, Va. Engineers have termed the results excellent. The radio installation provided good coverage of the mountainous terrain of Amherst County, with reliable communication

L. JOHN DENNEY, president of the Central Virginia Telephone Corp., Amherst, Va., operates the push button mobile radiotelephone in his car.

extending 25-30 miles from Central Virginia base station.

Under test were an automatic base station, a fixed station installed in the home of a rural subscriber and mobile units installed in a car and a truck.

As a result of these tests, L. John Denney, president and manager of the Central Virginia system, has announced the purchase of six additional mobile units. Monthly rates per station to subscribers will be about $32.

The Cameron (La.) Telephone Co. has ordered direct dial radiotelephone equipment for rural subscriber stations at Grand Chenire and Creole on the Louisiana coast. This company, recently devastated by Hurricane Audrey, plans to use a combin-

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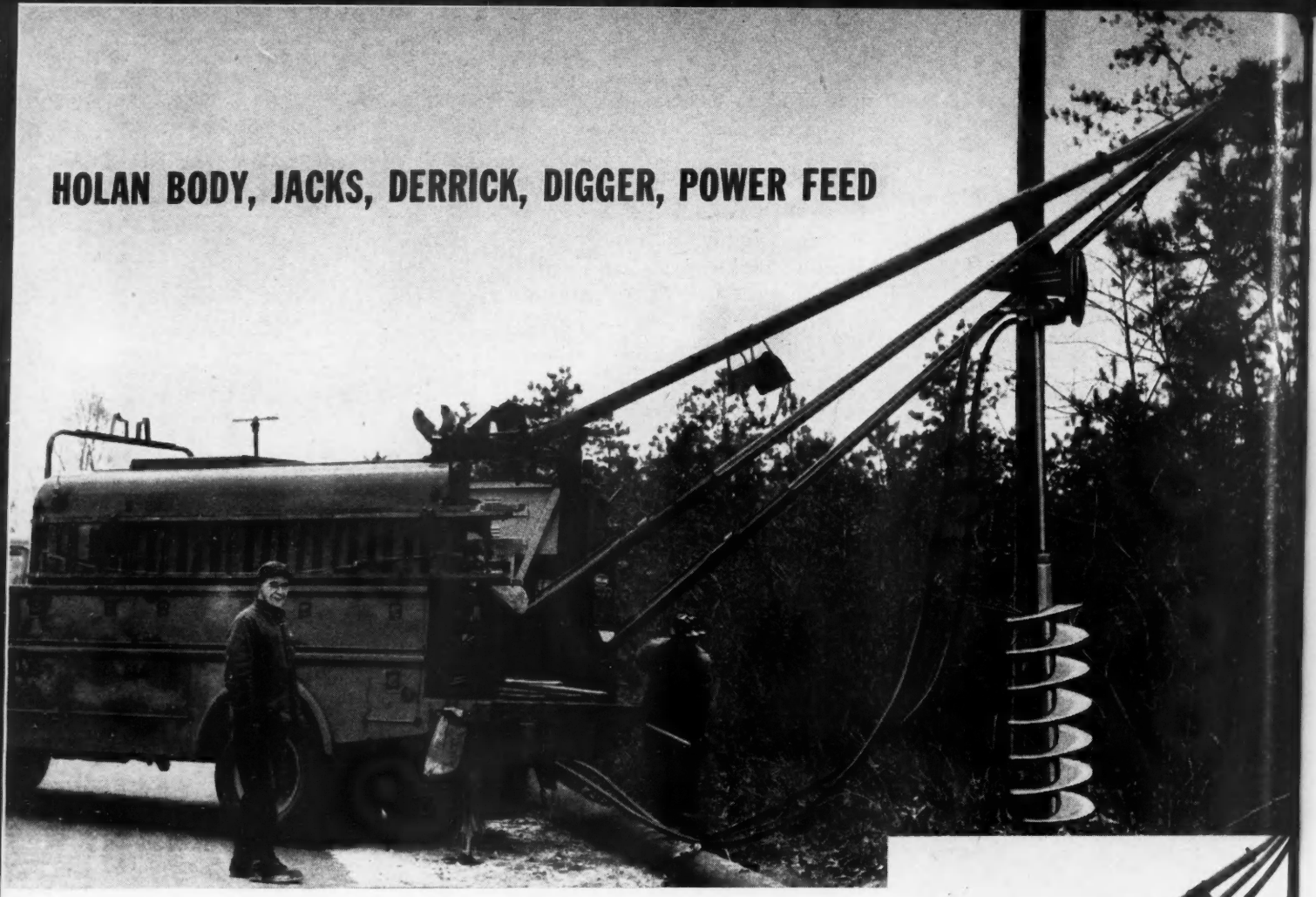

Dig the hole . . . set the pole

The photos tell the story. This crew is equipped to handle just about any job you give it.

Body: Holan's CHC-182—big enough to carry everything and everybody you need. A 7-man crew compartment plus the usual Holan features such as high-tensile steel throughout, double-panel doors, indented compartment handles and large inside dimensions.

Jacks: Fast-acting, self-stowing, Holan hydraulic jacks move from stowed position to full extension in 8 seconds . . . return in 6 seconds.

Derrick: Holan Series 5700—a live-boom unit with hydraulic sleeve locking for side legs. 6,000-pound capacity . . . 2,000 pounds for loading into truck.

Digger: Holan 4401-H hydraulic earth borer takes the hard work out of hole-digging. Goes down smoothly, pulls up easily, shimmies off dirt.

Power Feed: New bracket-type unit fits onto middle leg . . . uses hydraulic force and weight of derrick to force digger into hard ground . . . holds digger while derrick sets pole.

In other words, whatever you need in bodies and power equipment, you can get from one source: *Holan.* Everything is made of high-tensile steel, everything is a step ahead of the field. Write for catalogs on Holan equipment.

Holan digger shimmies off dirt. Notice digger power feed and sleeve locks on derrick side legs.

Holan power feed attachments can be mounted on Series 3700 or 5700 derricks. 3700, shown here, has 12,000-pound capacity . . . has been load-tested at 22,000 pounds.

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This feature of "Telephone Engineer and Management" helps you obtain up-to-date technical bulletins, catalogs and literature. To obtain your copies write Readers' Service Department, 7720 N. Sheridan Rd., Chicago 26, Ill.

Two-Way Radio

GENERAL ELECTRIC COMPANY'S Communication Products Department, has published a new 16-page brochure on two-way radio for business, industry, public safety and military applications. The brochure, No. ECR-479, shows how radio communication can be vital in instances where rapid communication is a must. It covers such matters as how far the user can talk, licensing, dependability of equipment, and engineering. Adaptability, convertability and interchangeability of G-E-Progress Line are discussed, along with types of applications for which two-way radio may be used.

"Short Cuts"

"SHORT CUTS to Greater Profits" is valuable to anyone interested in reducing costs. Information given is beyond the scope of automation and concerns a cost area that Equipto, over the past 50 years, has found to be the most often neglected. Following an evaluation and discussion of the most fertile field remaining for cost reduction, specific steps are suggested for their accomplishment.

Dust Collection

"HOW MUCH Are You Paying For Dust?" is the theme of a new two-color publication issued by Torit Manufacturing Co.

This literature explains the economies of dust control with Torit-designed unitized dust collectors through reduced capital expenditure, operating time and machine operating costs and an increase in employe efficiency.

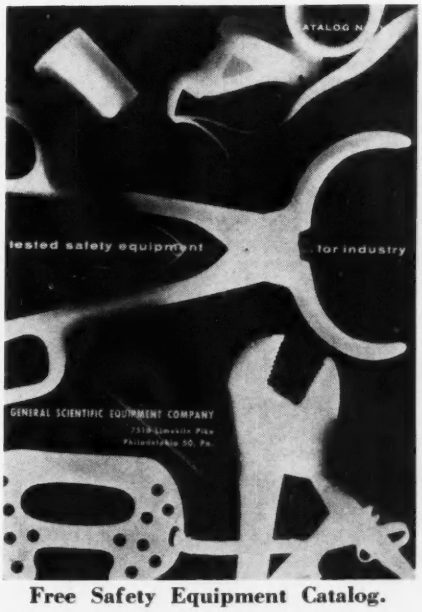
"On-the-job" photographs and application stories are used to demonstrate typical installations of both cabinet cloth filter dust collectors and cyclone separator type collectors.

Safety Equipment Catalog

NEW CATALOG 10, published by General Scientific Equipment Co. presents the company's entire line of safety equipment in an easy-to-use buyers'-guide arrangement.

Catalog includes all types of protective equipment — from a small half-ounce dust mask to a large barrel lifter. Nearly all of the several hundred listed items are illustrated; general specifications and recommended uses are given for each.

Equipment is grouped according to its function so that the reader can compare similar products and select the ones best suited to his needs. Product descriptions are completely factual and sufficiently detailed to permit a proper choice.



Free Safety Equipment Catalog.

Battery Users' Manual

THE COMPLETE scope of motive-power battery maintenance and repair is described in a revised edition of the "Battery Users Manual" (Bulletin GB-1599A), issued by the Industrial Division of Gould-National Batteries, Inc.

Developed as a result of in-plant training courses conducted by Gould service engineers, the 44-page book has been specifically designed to enable plant engineers, superintendents and foremen to conduct an organized battery training course in their own plant.

Encompassing every phase of battery maintenance, repair and selection this reference manual includes over 60 photographs, diagrams and tables to review battery theory and construction, demonstrate proper battery selection, illustrate charging method and equipment, demonstrate battery testing and techniques, and to present correct battery room layout.

Telephone Booths

FOUR-PAGE catalog folder from Suttle Equipment Co., describes complete line of Suttle telephone booths and gives prices and installation and operating data on each model.

Equipment Catalog

MARTINDALE CATALOG 31 includes complete information for selecting and ordering metal-working tools, motor and generator maintenance equipment, flexible shaft machines, safety equipment, and scores of electrical and mechanical maintenance products. The 64-page catalog is profusely illustrated with photos and detail drawings of all standard items including rotary burs and files, metal-cutting saws, mica undercutters, field coil testers, growlers, test instruments, portable blowers, face shields, dust masks, etc.

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BASE STATION antenna for the radiotelephone system is mounted on the 100 ft. tower near the Central Virginia Telephone Corp.'s building.

ation of microwave and radiotelephone equipment for oil companies which have drilling rigs off shore, as well as for other subscribers.

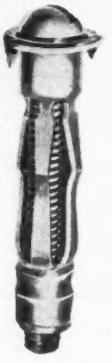
The new system has a number of features of special interest to telephone companies serving isolated ranches and mobile stations in rural areas, according to Arthur L. Reese, vice president of the Motorola Communications & Electronics Division which developed this equipment.

"First, by utilizing radio rather than wire lines, it eliminates the oftimes prohibitive cost of installing and maintaining telephone lines to serve only a few widely separated subscribers.

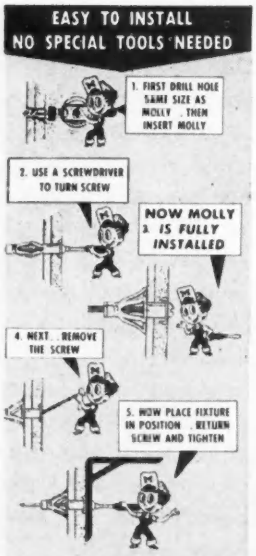
"Second, it benefits the telephone company by permitting the use of unattended exchanges for radiotelephone service as well as for regular wire line telephone service. Until now, all radiotelephone service has required the presence of an operator. With this new system, the telephone company's automatic base station, which receives calls from subscribers, connects directly with the unattended exchange via one of the regular 10-party subscriber line circuits.

"Third, this new system uses specific tone sequences for dialing, so it is practically impossible to receive a wrong number because of high ambient electrical noise levels. Also, the equipment is designed to give no number rather than a wrong number in those rare instances when, because of transmission difficulties, a tone is lost."

Join the SWITCH from Toggle Bolts to MOLLY



Molly screw anchors are making toggle bolts obsolete. Company tests have proved Mollys seven ways better for attaching station apparatus and wiring to walls of hollow construction. So join the switch to Molly screw anchors and enjoy these advantages:


EASY TO INSTALL
NO SPECIAL TOOLS NEEDED
1. FIRST DRILL HOLE SAME SIZE AS MOLLY . THEN INSERT MOLLY
2. USE A SCREWDRIVER TO TURN SCREW
NOW MOLLY 3. IS FULLY INSTALLED
4. NEXT . . REMOVE THE SCREW
5. NOW PLACE FIXTURE IN POSITION . RETURN SCREW AND TIGHTEN

1. Require smaller holes
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5. Self-aligning to permit use beside studs and on uneven wall backing
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PLANT ENGINEERS — For large Independent Telephone Company. Some experience necessary. In reply state age, educational and employment history. Address reply to Personnel Supervisor, Rochester Telephone Corporation, 10 Franklin Street, Rochester 4, New York.

HELP WANTED: Journeyman equipment installer-repairman. Qualified in Strowger Step, North CX and all types of CXR equipment. Reply, Attention Equipment Supt., Inter County Tel. & Tel. Co., Box 390, Ft. Meyers, Fla.

PLANT ACCOUNTANT REQUIRED: Experienced Telephone Plant Accountant, preferably college graduate, under 40, for a West Coast Company of approximately 160,000 stations. Supervising approximately 10 people. Kindly send resume' and salary requirements. Replies will be treated confidentially. Excellent opportunity with growing company. Write: Box 9081, c/o Telephone Engineer Publishing Corp., 7720 N. Sheridan Road, Chicago 26, Illinois.

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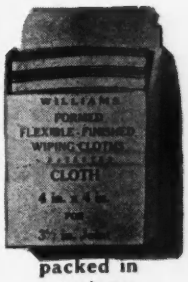

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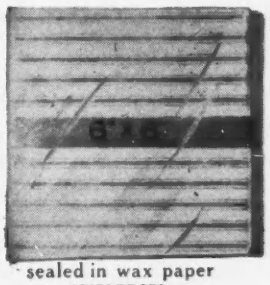
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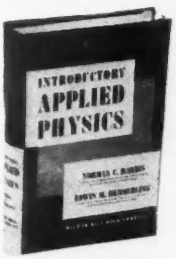

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Introductory

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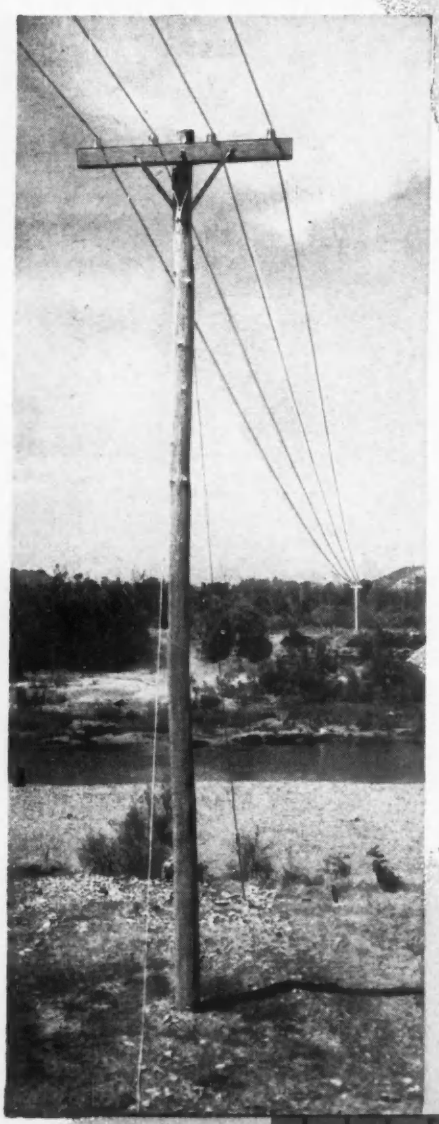

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INDIANA STEEL & WIRE COMPANY, INC.
MUNCIE, INDIANA

D. L. Mills Elected Exec. V. P. of Federal

THE ELECTION of Delbert L. Mills as executive vice president of Federal Telephone & Radio Co., a division of International Telephone & Telegraph Corp., was announced last month by Edmond H. Leavey, president of the parent company.

DELBERT L. MILLS

Mills comes to the IT&T System from the Electric Motor Division of the A. O. Smith Corp., Tipp City, Ohio, where he was general manager. Earlier in his career, Mills was president of Whirl-A-Way Motors, Tipp City, vice president of Standard Dayton Corp., Dayton, Ohio, and an engineer for Delco Products Division.

Born in Fort Wayne, Indiana, Mills received his Bachelor of Science degree in Civil Engineering at Purdue University. He is a member of the Professional Engineers of Ohio, the American Ordnance Association, and the Dayton Engineers Club.

British Cable Mfgr. Names Barker Sales As U. S. Agency

CONNOLLYS (Blackley) Ltd. of Great Britain, manufacturer of a full range of telephone and telecommunications cables up to 1800 pairs, electrical and power cables, enameled and special magnet wires, and insulating tapes, has appointed the Barker Sales Co., 996-8 Edgewater Ave., Ridgefield, N. J., exclusive United States sales agent. Barker Sales Co. will sell the entire Connolly line in the U.S.A.

STROMBERG-CARLSON

Transmitter

A DIVISION OF GENERAL DYNAMICS CORPORATION

News and views of Independent telephone people. VOLUME 6, NO. 7 • OCTOBER, 1957

Visitors to Rochester from distant places

"Tres impressionant!" French Military Mission completes tour of enlarged Stromberg-Carlson plant. Shown with company hosts John Voss, vice-president and general manager of the Telecommunication Division, and Henry Sheve, director of Military Contracts Department, are (L-R) Col. Jean Richy, chief of "Wire Department" in Research Branch; Mr. Voss; Maj. Gen. Combaux; Maj. Emile Rombout, chief of "Radar Department"; Lt. Col. Andre Nizart, liaison officer at Fort Monmouth, N. J.; Lt. Col. Pierre Colin, Signal Corps chief at technical section of the army; Mr. Sheve; Pierre Tapernoux of Stromberg-Carlson Research Department who served as translator; Maj. Andre Weinis, Telecommunication Research Branch.

Travel in reverse

Lunch time conversation these days is heavy with vacation trivia — of "green pastures" beyond the Rochester horizon. In the midst of this seasonal centrifugal movement there has been an important reverse current . . . . people who have journeyed *to* Rochester and Stromberg-Carlson to inspect the enlarged manufacturing facilities and to learn about products now becoming available in the field of advanced telecommunications.

Among the many visitors was a top-level military mission from France, headed by Major General Edmond Combaux, chief of Telecommunication Services, Research and Development Branch, French Ordnance. From the other direction, teams of communication engineers from Korea and Formosa were here to further their working knowledge of Stromberg-Carlson systems.

Practically a commuter is Ralph Hackbush of Toronto, Canada, talking over additional Carrier/Microwave requirements in the Dominion with C. H. C. Bon (seated), export manager.

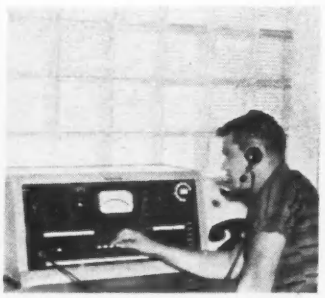
Personally addressed to destination. Another shipment of switchboards for Korea receive OK from Woo H. Kee, second from right, a Korean communications engineer taking intensive training in use of equipment at Rochester. Others (L-R): Yung Chang Huang of Formosa; Soon K. Moon of Korea; Eugene McCale and Robert Brorein of Stromberg-Carlson.

Real Missouri welcome by the Cartwrights — Fred, Nita and son Jimmie — as Postman (Editor) and family arrive in Noel. Town is vacationist's paradise 11 months of year; nationally famous for re-mailing Christmas Cards postmarked "Noel" in December.

Postman's Holiday No. 2: **Tire tube float down**

Southwest Missouri has a charm which is a composite of several elements: intoxicating beauty, at times hauntingly wistful; a pace for living which differentiates between the essential and the immaterial; an uneffusive friendliness that responds to cultivation. We had become aware of this in Branson; as we moved toward the tri-state corner, the impression became a conviction.

No one seemed surprised that a summer vacationist should travel to *Cassville, Missouri.* "Naturally you're going down to Roaring River . . . wonderful fishing, swimming, camping. Or perhaps it's Crystal Cavern, or one of the lakes." We learned a lot about the region from a retired Air Force colonel who had lived in dozens of countries and commuted the Atlantic 46 times, as we had lunch in his drug store in Galena. Some day we, too, will return, when masters of our own time.



John Holden of Cassville remembers the early days, but plans for the future. Step-sons George and Bob Breedon now do much of the work in dial exchange.

Reaching Cassville, we met John Holden on the steps of his telephone building. John started operating in this region 33 years ago; recently completely the conversion of his Cassville office (See May '57 Transmitter). You'd hardly know, to talk to him, how roughly he'd been treated by torrential floods this Spring . . . . John and his boys just rolled with the punches and worked longer hours. His complete dial program is not quite finished, but he and the citizens certainly like what they already have.

Noel, Missouri, had been a primary objective. We were sure we'd like Fred Cartwright; we had wondered how this town, that could be "digested between meals" in most city wards, held loyalty magnetized. And we had a whole extra day — the Fourth of July — to exploit the project.

Fred and Nita Cartwright had recommended a lodge on the Elk River north of town. Guests with less than 3 years patronage were consid-

Mrs. Edith Mitchell and son Walter, of Seneca, Missouri. 50 additional lines of XY Dial equipment installed recently indicate consistent growth.

Picturesque overhanging cliffs along Elk River near Noel. Fred Cartwright repaired lines standing in his boat during unprecedented floods this Spring.

Astride Missouri-Oklahoma line in Seneca, Milnot factory has duplicate manufacturing facilities — processes and ships its nationally known milk product on the side most favorable at any given time!

Elk River to Missouri's homestyle hospitality

ered Freshman; as total neophites we were initiated immediately — and loved it! Catfish, "Schmoo"-like, beg to be caught (just ask Elmo Landrie why he makes his home in Noel!). And for tops in uninhibited fun, try floating down the Elk on a tire tube during high water — especially if the whole group is equally uninhibited.

Telephone business? Fred admits to being involved in it. Showed his trouble-free dial exchange; pointed out the Spring's high-water mark on the cliffs *above* the crossarms . . . . there were slight service interruptions then!

"Let's have a little picnic at our house tonight," he and Nita suggested. "Say, about 20 or so of our telephone neighbors."

While they were completing plans, I headed north to *Seneca*. Walter and Elinore Mitchell had recently sent out New Baby cards — extremely clever, and some of you probably saw them. Walt was glad to break away from a case of Carrier trouble (I was relieved as I looked at the nameplate). In a short trip around town he pointed out three interesting commercial customers: American Tripoli Division of Carborundum Corp., processors of the very fine abrasive used to put high polish on chromium; the Milnot Company whose powdered milk factory strategically straddles the State line; the Chase Machine Shop which specializes in drawn aluminum parts, manufacturing dies to any customer's specifications.

Mrs. Edith Mitchell, Walter's mother, has been in the telephone business in Seneca for 21 years; Walter obtained a furlough from Korean duty with the Signal Corps to return and take over on the death of his father. The XY Dial exchange cutover in '53 carried out the plans started by Mr. Mitchell, senior.

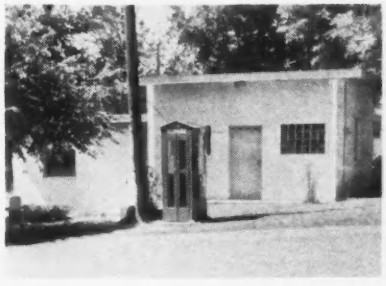
Equidistant from Neosho, on the other side, is *Granby*, where the telephone company has long been managed by Harold Stouffer, immediate past-president of the Missouri Association. Harold is now duplicating, in the neighboring town of *Diamond*, the modernization he completed at Granby; his son Dale Stouffer and (the very new Mrs.) Shirley Stouffer carry on the business.

Granby is the oldest mining town in southwest Missouri. The population (once 15,000) decreased as lead and zinc mines became less productive, but new industries in Neosho and Joplin give cause for optimism. It is one of three towns in the area which came up in the last census.

Diamond presents the not unusual problem of a small town coming to life, primarily because of its strategic location half way between the same two cities. A terrific job of plant rebuilding has been rushed to coincide with a December date for conversion to XY Dial.

Back in Noel, we were greeted by the luscious aroma of outdoor cooking. Fred and Nita had used the time well; the Cartwright picnic stands high on our list of memories.

Mother-daughter combination uses skill and tact to make the best of equipment short-comings until Diamond board is replaced by XY Dial at year's end.



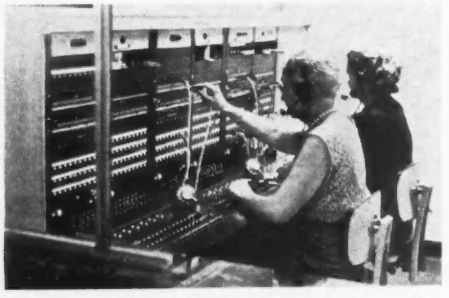
Is it Granby, or is it Diamond? Could be either, as new Diamond exchange will be identical to Granby (shown here) which was cut into service in 1953.

Federal government has recently created a National Monument at birthplace of George Washington Carver, famed scientist, near Diamond.

Tri-State Picnic. Fred Cartwright said he'd "ring up a few of the telephone neighbors for hamburgs in the back yard." Reading around from left to right: Mrs. Pat Smith, Decatur, Ark.; Mrs. O. D. Wilson, Sulphur Springs, Ark.; C. R. Pickrell, Southwest City, Mo.; Mrs. Dale Stouffer, (Dale is not in view) Granby, Mo.; Mrs. Jack Thompson and Jack Thompson, Southwest City, Mo.; Harold Stouffer, (Mo. Tele. Ass'n Pres.) Diamond, Mo.; Mr. and Mrs. Fred Cartright, (in front) Noel, Mo.; W. D. Schmidt, Decatur, Ark.; Mrs. Elsie Harmon, Noel, Mo.; Mrs. W. D. Schmidt, Decatur, Ark.; Mrs. George Forbes; Mrs. Earl Brown, Lanagan, Mo.; O. D. Wilson, Sulphur Springs, Ark.; Mrs. Harold Stouffer, Diamond, Mo.; Mrs. Ross Aubrey, Jay, Okla.

Recently expanded home for two great rival newspapers.

XY Dial equipment — tried and trusted in many similar "critical" situations.



Efficiency of the dial system frees operators for incoming and service calls, receptionist duties.

Press foreman in constant touch with all departments as presses roll out 55,000 newspapers per hour, per press.

Countless telephone calls by circulation managers and their secretaries guarantee that 126,000 daily papers are distributed efficiently each morning and evening (with 178,000 on Sunday)!

"What makes a newspaper?"

Obvious, you say . . . . news, and paper. Oh, yes, and then there are reporters, editors, photographers, typesetters, pressmen, and the Ads which pay most of the cost. The wire services, "delete" pencils, the omnipresent shadow of a fixed deadline; the dread scourge, "Stop the presses!"

Anything as vibrant as a "Daily" must, by its very nature, be volatile . . . . all that keeps it from being complete chaos is the communication system, providing nourishment from the outside, assimilation and circulation within.

Let's be honest. The reason for your reporter's recent visit to the enlarged and modernized Gannett newspaper building was to see how their new telephone system was laid out. Mr. Al Best, group building superintendent for Gannett Co., Inc., provided the cues, but it's easier if we go back a bit.

Two newspapers — the evening *Times Union* and the morning *Democrat and Chronicle* — are both owned by the Gannett Co. Cozy? Not on your life! The keenest rivalry has always been the pattern, *and that policy is to remain.* As for the immediate future these lusty gladiators who compete for advertising space and circulation figures as well as news will all be brought under the same roof, with some functions as completely isolated as a scarlet fever quarantine, but others fully integrated for efficiency — production, pressroom, mailing. Sort of like the high speed trunk boulevards that reverse the 2-way, 3-way lanes during morning and evening rush hours. Caught between Scylla and Charybdis, Mr. Best lost himself in such easy matters as installing new color presses, moving partitions, ordering furniture; the communication problem was turned over to the Commercial Department of the Rochester (N.Y.) Telephone Corporation.

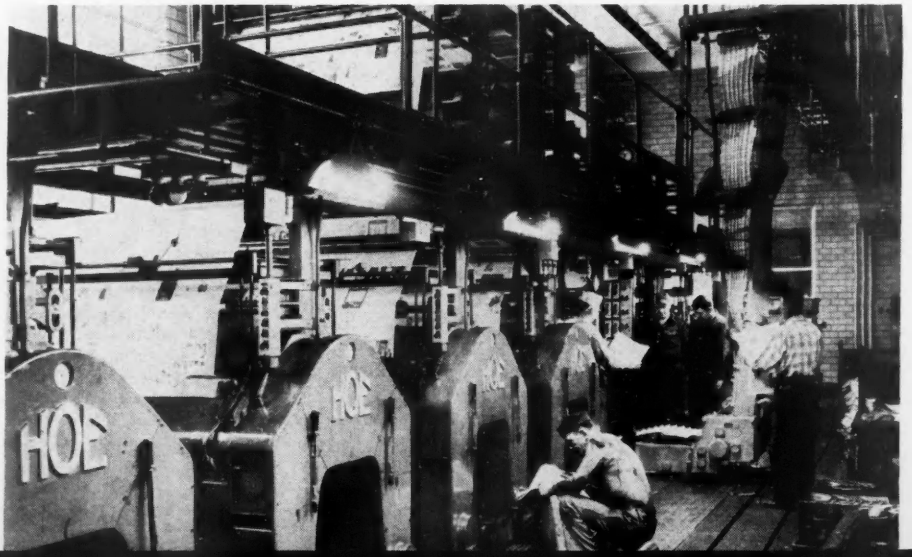
Traffic studies of the existing systems in the two separate buildings were available; a new plan, retaining the good features of these systems and incorporating many efficiencies not heretofore possible, was drawn up. Basic to the whole communication network was a 240-line XY-PBX with a new 3-position attendant's cabinet.

One innovation will greatly speed up the taking of Want Ads. A separate PBX, with "gating" feature, is placed so that the incoming operator can see at a glance which "Miss Want Ad" is free to accept the next order.

As of this visit the system has proved its merit conclusively. The real test will come soon, as the bulk of the *Democrat and Chronicle* departments move into the Gannett newspaper building. But Rochester Telephone Corporation personnel have met such challenges before — they are confident of their overall plan and the equipment they have selected.

The one problem no one has completely solved: what happens when the night reporter taps the day reporter's line?

High-speed camera has "stopped" high-speed presses where 70 tons of newsprint are used daily in 16 press units. Newsprint rolls, weighing 1750 lbs., are fed into machines without stopping or slowing presses.



The Daily Newspaper

City desk in the news room, where the world becomes a glass bowl.

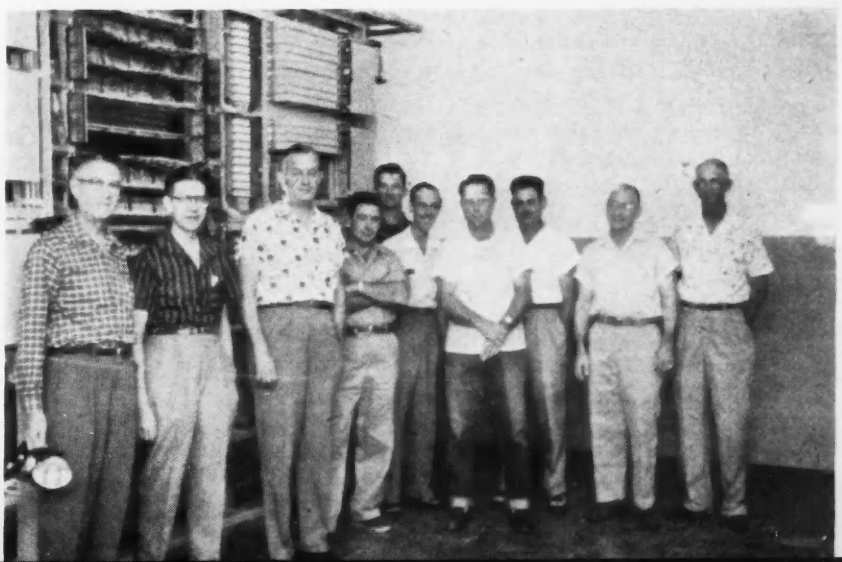
Cutover to XY Dial marks 50th year of telephone service in Groesbeck, Texas

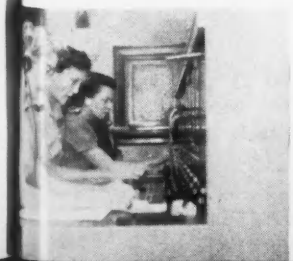
Pictured right (l to r) are Equipment Supervisor L. A. Wallace; Installers F. Weaver and R. Thompson; Ass't District Mgr. Elbert Engram, Groesbeck; and W. Cox, installer; all of Gulf States Telephone Co. Below: Ready to take part in cutover ceremonies are (l to r) M. Oates, special agent; Rolla Johnson, General Manager, Gulf States; J. Hawkins, Editor, Groesbeck *Journal*; M. L. Harris, engineer; W. Bicker; B. Fox; R. Little; Donald Lamb, Ass't Gen. Mgr.; Gulf States Tel. Co. and City Councilmen W. B. Aman and E. Cook.

"A cutover at 6 A. M. on a busy Monday morning! No quiet weekend ahead to check the equipment! It's unheard of!"

But that's the way the people at Gulf States Telephone Company marked the 50th year of telephone service in Groesbeck, Texas; and in so doing showed their confidence in the work performed by their own equipment installers.

With the 700-line, 900 terminal XY Dial equipment and a Stromberg-Carlson 3-position #3 tollboard (with intertoll dialing), it appears Groesbeck, Texas is ready to start its second 50 years of telephone service without a hitch.

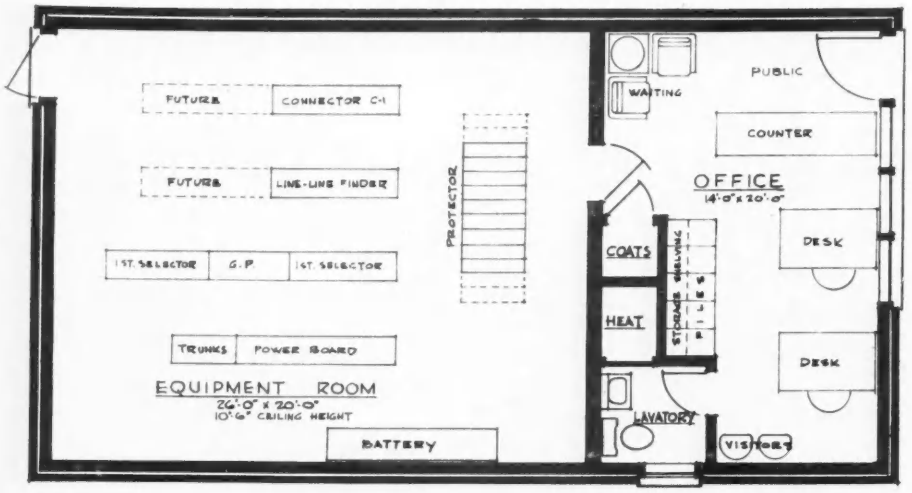




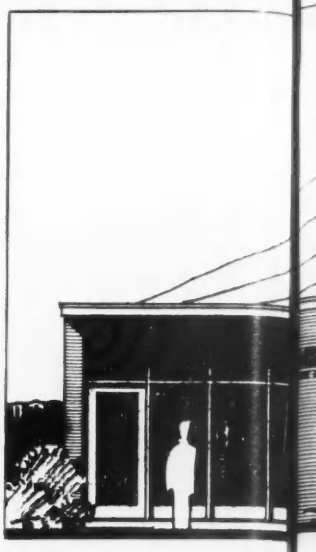
New Stromberg-Carlson toll board is "manned" by Mrs. L. Black, Mrs. V. Engram and Mrs. R. Oates.

If you're planning to build,

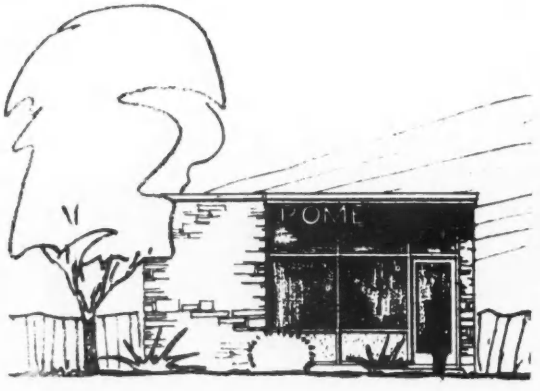
We can help you

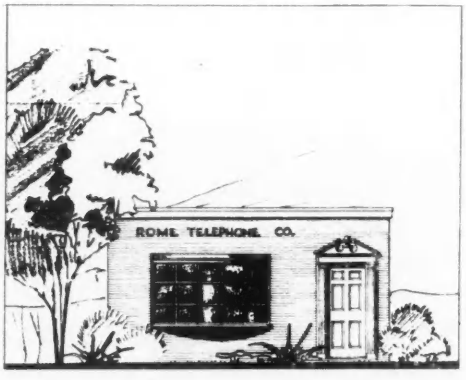


Plan "B-O" (O indicates addition of office space to basic plan) is recommended for terminal per station (TPS) offices. Capacity is 1200 lines, 2400 terminals. Plan "B-O" shown: 42' 6" x 22' 0"; without office, plan "B": 28' 0" x 22' 0". Equipment layout for illustrative purposes only.



Shown below are two more of the seven elevations available.





Planning to build a new Telephone Exchange Building? Need working drawings and detailed specifications?

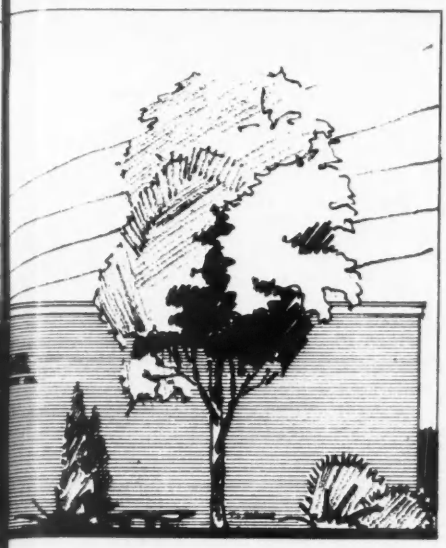
The Stromberg-Carlson Telephone Finance Department is offering, as part of its complete service, another "first" in the field of assistance to *all* Independent Telephone Companies: complete working drawings and detailed specifications for the construction of a completely fireproof central office building.

With 28 different plans from which to choose, the person planning construction has been given complete flexibility in design. He first makes selection from four basic plans, depending on the size of the equipment to be installed and the option of including business office space. Next comes the selection of one of seven different elevations, completing the full range of choices.

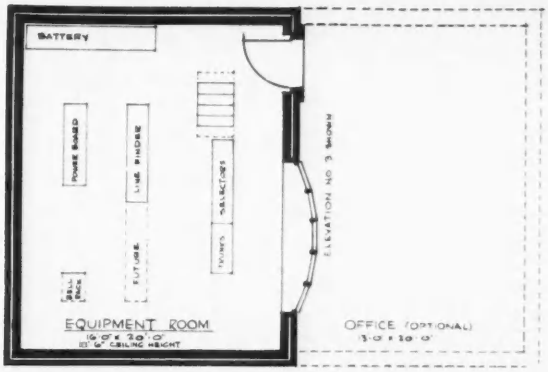
To make this complete service available to all Independent Telephone Companies, Stromberg-Carlson engaged the services of a registered architectural firm familiar with this type of construction. Both contemporary and traditional exterior designs have been presented in brochure form to satisfy individual taste in central office buildings. In addition, floor plan sketches and some construction details are included in this booklet, available, without cost, from Stromberg-Carlson branch offices, sales representatives, or directly from the Telephone Finance Department at Rochester 3, N. Y. Ask for the booklet "Exchange Building Plans."

Two sets each of complete working drawings and detailed specifications for the building selected — everything that a building contractor would need — can be secured for $100, billed separately on an open account. The cost of the original design work has been borne by Stromberg-Carlson, thereby giving the telephone operating company the benefit of expert architectural design at little cost.

The plans have been prepared for use by general building contractors; specifications have been drawn with particular emphasis on using materials available in all parts of the country. For example: electrical and other fittings are all standard hardware items with manufacturers' code numbers or alternate numbers for



All elevation designs may be used on the long side of the building as shown above in Elevation #2.



This basic Plan "A," for smaller TPS offices, has a capacity for 200 lines, 600 terminals. It is also recommended for terminal per line installations in which the equipment room can accommodate 400 lines.

Basic Plan "A" shown: 18' 0" x 22' 0"
With office plan "AO": 32' 0" x 22' 0"
Equipment layout is for illustrative purposes only.

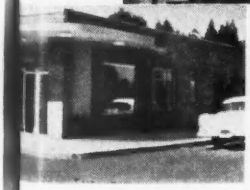
other manufacturers clearly indicated.

These designs and specifications, made available only recently through Stromberg-Carlson branch offices and sales representatives, have already received wide acceptance. Among the exchanges built, or now in different stages of construction are those for the Kaskaskia Valley Telephone Co., Norman Gum, manager, at Patoka, Ill. (Elevation #3, floor plan B-O) and at Keyesport, Ill. (Elevation #3, floor plan A); also for Anoka County Telephone Co., Allen Johnson, manager, at Soderville, Minn. (Elevation #2, plan B-O). Several others have obtained the plans and are now asking for bids from local contractors.

The floor plans presented in the drawings have been designed for XY Dial equipment. If other makes of dial equipment are now on order, it is suggested that a close check be made of the interior space available; a larger area may be needed. In addition, if REA loan applicants would like to use Stromberg-Carlson plans for their exchange building, it is advisable to check with the REA field engineer.

Estacada straddles gateway to Eastern Oregon

Mr. and Mrs. Day look pleased as they inspect new XY Dial equipment.



Up-to-date exchange of the Estacada Telephone and Telegraph Co. is result of anticipated growth in the area.

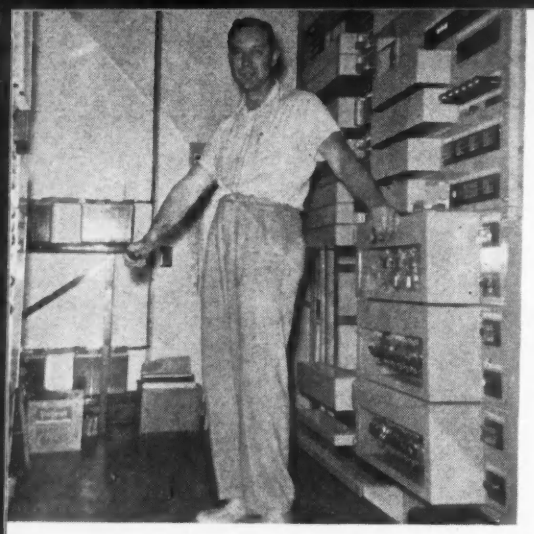
Gateway to some of the best fishing, camping and hunting country in the great Northwest, Estacada, Oregon, lies about 35 miles east of Portland, in the direction of Mount Hood.

It was the new highway (almost complete) over Mt. Hood, plus the farming, lumbering and sawmill operations in the area around Estacada, which made Mr. and Mrs. Floyd Day, owners of the Estacada Telephone and Telegraph Co., revise their thinking about the number of lines necessary to furnish complete telephone service for their subscribers.

Originally scheduled to be equipped with 320 lines, the Day's, who have made Telephony their life's work, twice increased their order by 100 lines before the cutover this summer.

New road over Mount Hood leads to Estacada, gateway to Eastern Oregon.

If the new highway brings growth beyond their expectations, the Day's won't worry; they know how easy it is to add lines to their present XY Dial equipment.



The Iowa-Illinois Telephone Company sent Floyd Anderson, equipment engineer, to see that all went well at Packwood, Iowa.

Close race, but everyone wins, as two Iowa exchanges go dial

Within two weeks of each other two more Independent telephone companies in Iowa cut over to XY Dial.

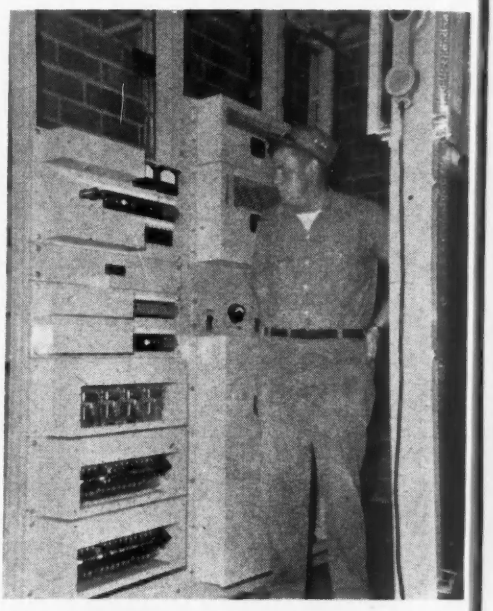
Close to the lake area in Northern Iowa (near Minnesota, the Land of 10,000 Lakes), the Goldfield Telephone Company, managed by Kenneth Axon, celebrated its cutover nearly two weeks before Packwood, which is about 150 miles Southeast (as the crow might fly).

To give its subscribers the finest in telephone service, the Goldfield exchange received both technical and financial assistance from the Stromberg-Carlson Telephone Finance Department.

The cutover at Packwood was far from the first for the Iowa-Illinois Telephone Company, which serves over 8,000 subscribers through a network of 22 exchanges in Iowa. Nor will it be the last for this progressive telephone company.

Installer Johnny Johnson gives Packwood circuits final test before conversion to XY Dial takes place.

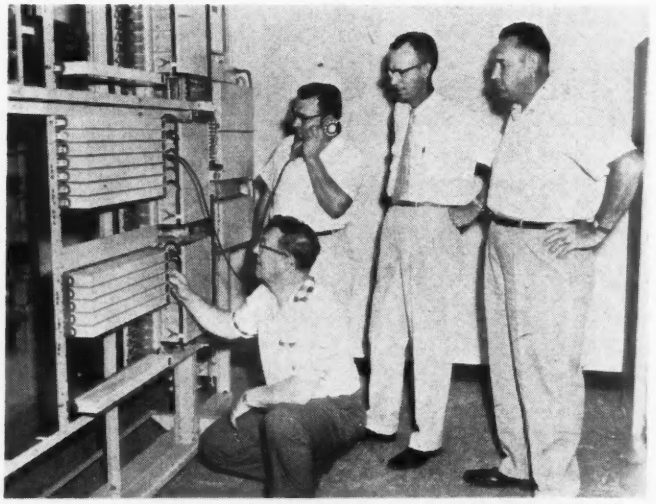
Manager Kenneth Axon, Goldfield, Iowa, gives power board his undivided attention.



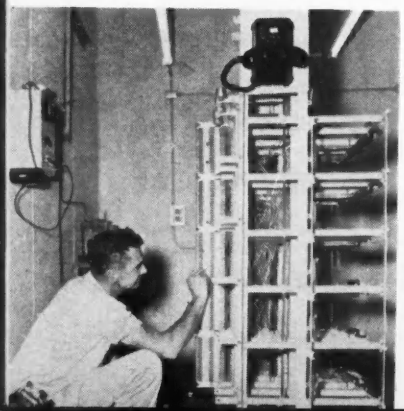
Chilhowee: another step on road of progress for United of Missouri

The importance of the exchange at Chilhowee, Mo., was re-emphasized recently as this unattended 100-line office was cut over to XY Dial.

The presence of personnel from the United Telephone Company of Missouri, including John Herab, Verne Hix and Richard Raker, in addition to the Mayor of Chilhowee, Melvin Matthews, who made the first call, and W. J. Riley, Stromberg-Carlson sales engineer, indicates the pride in and the importance of this step along the road of progress for the United Telephone Company of Missouri and the communities it serves.



The United Telephone Company of Missouri sent (standing) John Herab, Verne Hix and Richard Raker to Chilhowee while Stromberg-Carlson was represented by W. J. Riley of Kansas City (foreground).



E. T. Hutson, United Telephone Co. installer, must have the patience of Job as he checks the main distributing frame.

Stromberg-Carlson
Transmitter
Published by THE TELECOMMUNICATION DIVISION
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A DIVISION OF GENERAL DYNAMICS CORPORATION
Rochester 3, New York
GEORGE B. FORBES, Editor

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TELEPHONE ENGINEER & MANAGEMENT, October 15, 1957

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THE BACK OF THE BOOK

By JOHN G. REYNOLDS

"Meanest Man"

CALIFORNIA newspapers claimed last month that the meanest man in the world "is in San Francisco." The reason: — He amuses himself by answering the phone thus: "This is a recording. Kindly state your business and I will return your call later." Then he sits back with a ghoulish grin and listens to the callers squirm thru their various routines.

Cat Collector

IF YOU ARE ever in the vicinity of Hahira, Ga., drop by the telephone office. Unless things change you'll find a cat, owned by a telephone operator, sitting on the window sill of the exchange. Her Job: raking coins into a cigar box with her front paw when customers pay for long-distance calls.

Business and Liberal Arts

YOUNG MEN considering business careers, and in doubt about the value of putting hours into liberal arts classes, are advised to ponder the encouragement many big companies are giving to their executives to study "non-business" courses.

Latest such encouragement to come to our attention is the experimental program launched by Northwestern University and the American Telephone & Telegraph Co. More than 20 executives of the company will go back to school for eight weeks.

"The objective is to provide executives from the company and the various Bell telephone systems with a coherent liberal arts program in combination with business studies," said Walter B. Rideout, associate professor of English and director of the program.

The executives will take a course in "Art in the Modern World" from Thomas M. Folds, professor and chairman of the art department; a course in "Man in Society" from Raymond A. Mack, associate professor of sociology; "Literature as Individual and Social Expression" from Rideout, and "Business Decisions and Social Goals" from Dascomb R. Forbush.

Why all the emphasis on culture for businessmen? Wise men in business and industry know that art, literature and the study of man are more than subjects for classroom study or for display in a museum or for discussion by an esoteric group of scholars. Their study helps an individual grow and develop and bring out his own best capabilities. A man who can understand and appreciate what other men have created in oils, words or ideas should be better equipped to produce creative and imaginative work in his own field. . . .

Too often have young men measured each course they take in college against the dollar sign — will it help them make a buck later? But knowledge pursued for its own sake, and for the personal pleasure and satisfaction that its posessor enjoys, can also pay off in the long run in dollars. All other things being equal, a man whose horizons have been broadened by a study of liberal arts should be a better asset to a company than one who can't see further than the end of his slide rule.

"Cloey Calling"

OUR MICHIGAN correspondent tells us *Teresa Bedlinguette*, a telephone operator at Port Huron, recently handled a collect call to a *Cloey Muser*. She was unable to find a *Cloey* listed but tried a *Muser* residence.

She was told: "Yes, I'm Mr. Muser, but not Cloey Muser. I did have a dog named Cloey, but he's gone."

Then he hesitated and said: "Oh, well, I'll accept the charges and see what it's all about."

A voice at the other end said: "It's Cloey Muser who's calling you. This is the Detroit dog pound and he's here."

There's Drama In Phone Work

THE Chicago American took time out last month to pass along a few "orchids" to the nation's "Hello Girls."

"In these dial-phone days," said the *American*, "when you even can dial across the continent, you no longer hear the 'Voice With a Smile' each time you pick up the phone. Unless, that is, you have the blunderful luck of finding making a dial call as mysterious as the equation for nuclear fission. Or you just don't know the other party's number. But the 'hello girl' is still with us. In fact, Illinois Bell Telephone Co. officials reverently call her 'our most essential employe'. . . ."

Pointing out that women in the better jobs at Illinois Bell, like their male colleagues, have "come up through the ranks" the *American* said, "Starting as operators, clerks and typists, experience and additional education had readied them for more responsibility, more authority — and more pay — when those steps up the ladder became available.

"The more you learn about the phone company and its people the more you find all of them are proud of themselves and proud of the service they render. The company, like other telephone companies with which it is affilited, has a progressive 'three cheers for YOU' employe relations program. . . ."

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